

Rezoning Application  
Residential Planning Proposal

**27 Mitchell Street,  
Croydon Park**

---

**UPDATED TRAFFIC AND PARKING ASSESSMENT REPORT**

25 August 2016

Ref 16519

**VARGA TRAFFIC PLANNING Pty Ltd**  
**Transport, Traffic and Parking Consultants** 

Suite 6, 20 Young Street, Neutral Bay NSW 2089 - PO Box 1868, Neutral Bay NSW 2089  
Ph: 9904 3224

## TABLE OF CONTENTS

|                                       |           |
|---------------------------------------|-----------|
| <b>1. INTRODUCTION .....</b>          | <b>1</b>  |
| <b>2. INDICATIVE MASTER PLAN.....</b> | <b>5</b>  |
| <b>3. TRAFFIC ASSESSMENT .....</b>    | <b>7</b>  |
| <b>4. PARKING ASSESSMENT.....</b>     | <b>22</b> |

**APPENDIX A      MASTERPLAN CONCEPT PLAN**

**APPENDIX B      TRAFFIC SURVEY DATA**

**APPENDIX C      SIDRA MOVEMENT SUMMARIES**

## LIST OF ILLUSTRATIONS

- Figure 1**      Location
- Figure 2**      Site
- Figure 3**      Road Hierarchy
- Figure 4**      Existing Traffic & Parking Controls
- Figure 5**      Public Transport
- Figure 6**      Existing Traffic Volumes
- Figure 7**      Masterplan Nett Increase in Traffic Volumes

## Document Verification

|                  |                                  |                   |             |                 |             |
|------------------|----------------------------------|-------------------|-------------|-----------------|-------------|
| <b>Location:</b> | 27 Mitchell Street, Croydon Park | <b>Job Number</b> |             | 16519           |             |
| <b>Revision</b>  | <b>Details</b>                   | <b>Prepared</b>   |             | <b>Approved</b> |             |
|                  |                                  | <b>By</b>         | <b>Date</b> | <b>By</b>       | <b>Date</b> |
| Draft 01         | Initial Draft for Review         | CP                | 22/08/16    | RV              | 25/08/16    |

## 1. INTRODUCTION

This updated report has been prepared to accompany a Planning Proposal application to Burwood City Council which seeks to rezone the site for medium density residential development at 27 Mitchell Street, Croydon Park (Figures 1 and 2).

The report provides an updated traffic analysis using *current 2016 traffic survey data* for the analysis of several nearby intersections as well as the site's two vehicular access driveways.

The updated report includes “before/after” capacity analysis of 2 nearby intersections nominated by the Roads and Maritime Services for analysis in any future Development Application, as per their letter dated 9 June 2016.

There is *no change* to the previously submitted Planning Proposal which seeks to rezone the subject site from *R2 Low Density Residential* to and *IN2 Light Industrial* to *R1 General Residential*, and increase the maximum FSR from part 0.55:1 and 1:1 up to 1.2:1.

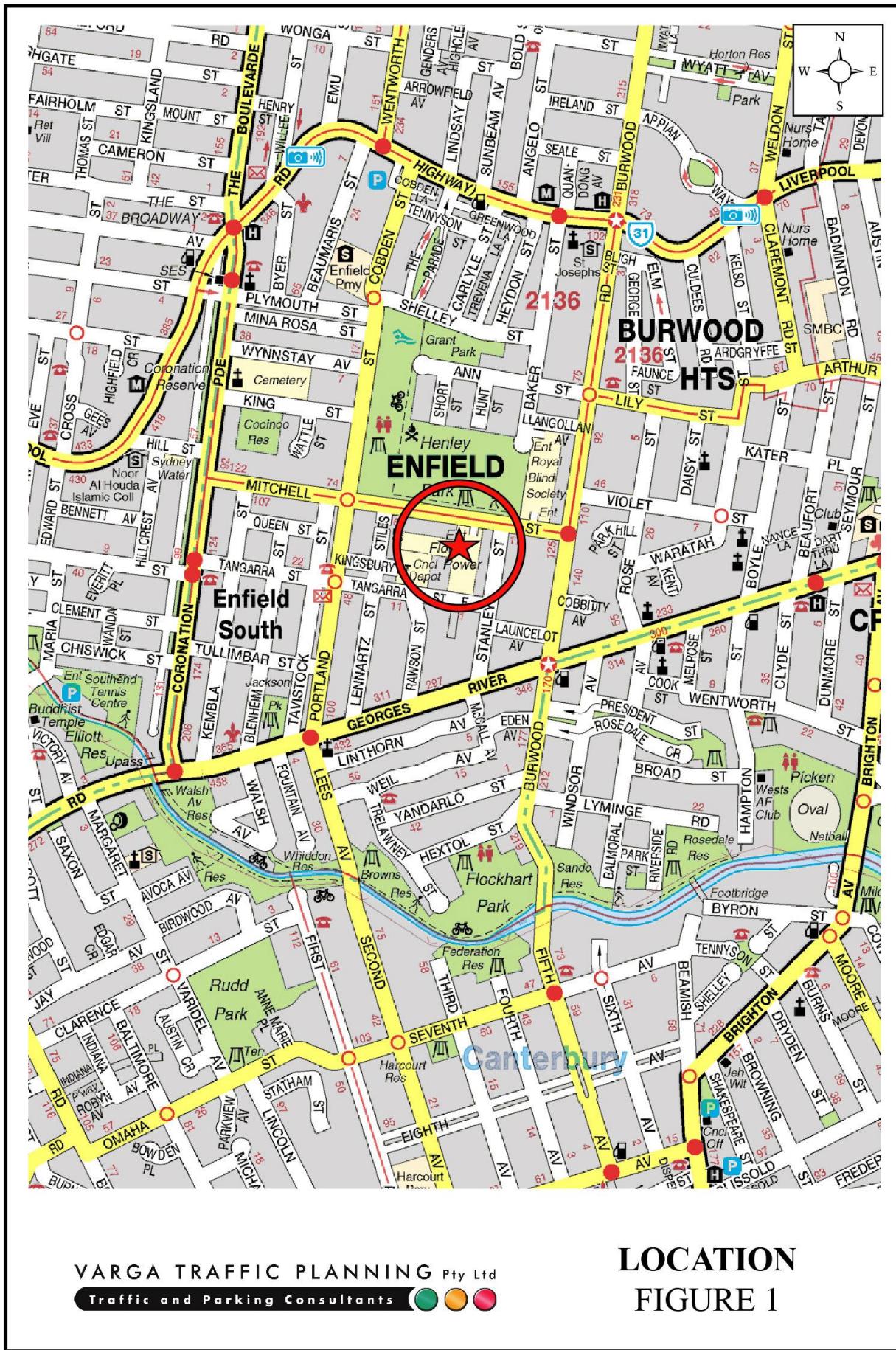
An indicative Masterplan is attached to the Planning Proposal which provides a concept for the type of residential dwellings and densities. The indicative Masterplan envisages demolition of the existing Flower Power nursery garden centre on the site to facilitate the future construction of residential apartment/townhouse development.

Off-street parking is likely to be provided within a new basement car parking area, in accordance with Council's requirements.

The purpose of this report is to assess the traffic and parking implications of the Planning Proposal and to that end this report:

- describes the site and provides details of the indicative Masterplan
- reviews the public transport services and road network in the vicinity of the site, and the traffic conditions on that road network

- estimates the traffic generation potential of the indicative Masterplan, and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the indicative Masterplan in terms of road network capacity
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site.





## 2. INDICATIVE MASTER PLAN

### Site

The subject site is located on the southern side of Mitchell Street, in between Stiles Street and Stanley Street, and extends through to Tangarra Street East. The site has a street frontage approximately 63m in length to Mitchell Street, 67m in length to Tangarra Street East and occupies an area of approximately 19,269m<sup>2</sup>.

The subject site is currently occupied by a Flower Power nursery which includes a fruit shop, pet shop and café.

Off-street parking for the Flower Power garden centre is currently provided for approximately 140 cars in a large outdoor car parking area. Vehicular access to the garden centre car parking area is provided via an entry/exit driveway located at the eastern end of the Mitchell Street site frontage.

Loading/servicing for the existing garden centre is currently undertaken by a variety of vehicles up to and including 8.8m long medium rigid trucks. The loading area is located at the rear of the site, with vehicular ingress provided via either the abovementioned driveway in Mitchell Street or an entry/exit driveway located at the eastern end of the Tangarra Street East site frontage. Vehicular egress from the loading area is provided via Tangarra Street East only.

### Indicative Masterplan

The Planning Proposal envisages the demolition of the existing nursery, fruit shop, pet shop and café buildings on the site to facilitate the construction of a new residential apartment/townhouse development comprising approximately eight buildings that range in height from two to three storeys. Redevelopment is subject to a future development application. A copy of the indicative Masterplan is reproduced in Appendix A.

Based on the proposed maximum FSR of 1.2:1, the indicative Masterplan attached to the Planning Proposal has identified a potential dwelling density in the order of 237 residential apartments, as follows:

|               |                      |
|---------------|----------------------|
| 1 bedroom:    | 64 dwellings         |
| 2 bedroom:    | 173 dwellings        |
| <b>TOTAL:</b> | <b>237 dwellings</b> |

Future off-street car parking is likely to be provided in basement car parking areas in accordance with Council's requirements. It is envisaged that vehicular access to the car parking facilities is to be provided via two separate two-way driveways; one located at the eastern end of the Mitchell Street site frontage and the other located at the eastern end of the Tangarra Street East site frontage.

### 3. TRAFFIC ASSESSMENT

#### Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

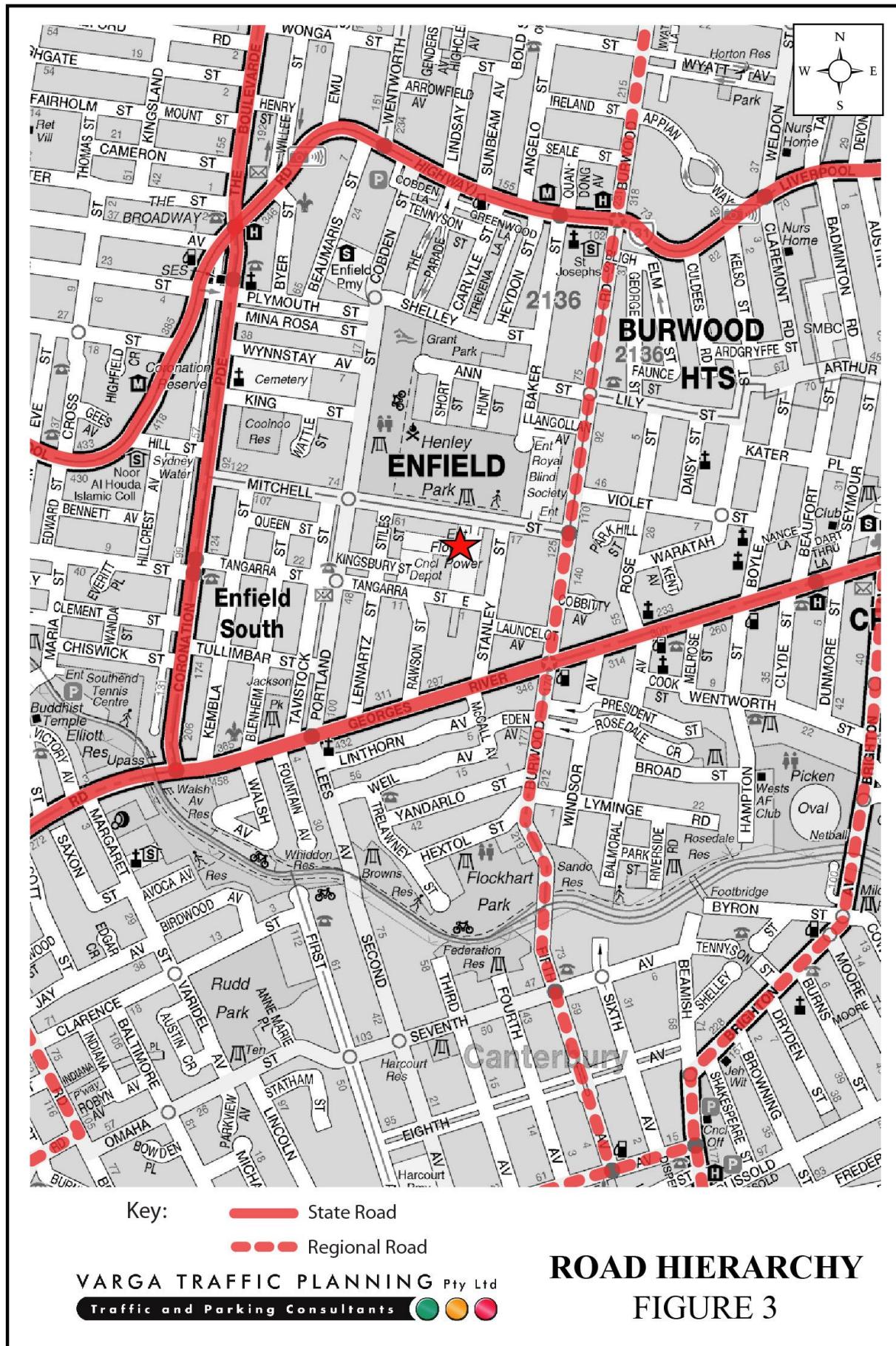
The Hume Highway is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Summer Hill to Campbelltown and beyond. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a centre median island.

Georges River Road is also classified by the RMS as a *State Road* and provides another key east-west road link in the area, linking Milton Street to Punchbowl Road. It typically carries two traffic lanes in each direction in the vicinity of the site, with kerbside parking generally permitted outside of commuter peak periods.

Coronation Parade is also classified by the RMS as a *State Road* and provides a key north-south road link in the area, linking Georges River Road to the Hume Highway. It typically carries two traffic lanes in each direction in the vicinity of the site, with kerbside parking generally permitted outside of commuter peak periods.

Burwood Road is classified by the RMS as a *Regional Road* which provides another key north-south road link in the area, linking Concord to Enfield. It typically carries one traffic lane in each direction in the vicinity of the site, with additional lanes provided at key locations.

Mitchell Street and Tangarra Street East are local, unclassified roads which are primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of both roads.



## Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 50 km/h SPEED LIMIT which applies to Mitchell Street, Tangarra Street East and all other local roads in the area
- TRAFFIC SIGNALS in Mitchell Street where it intersects with Burwood Road
- a ROUNDABOUT in Mitchell Street where it intersects with Portland Street.

## Public Transport Services

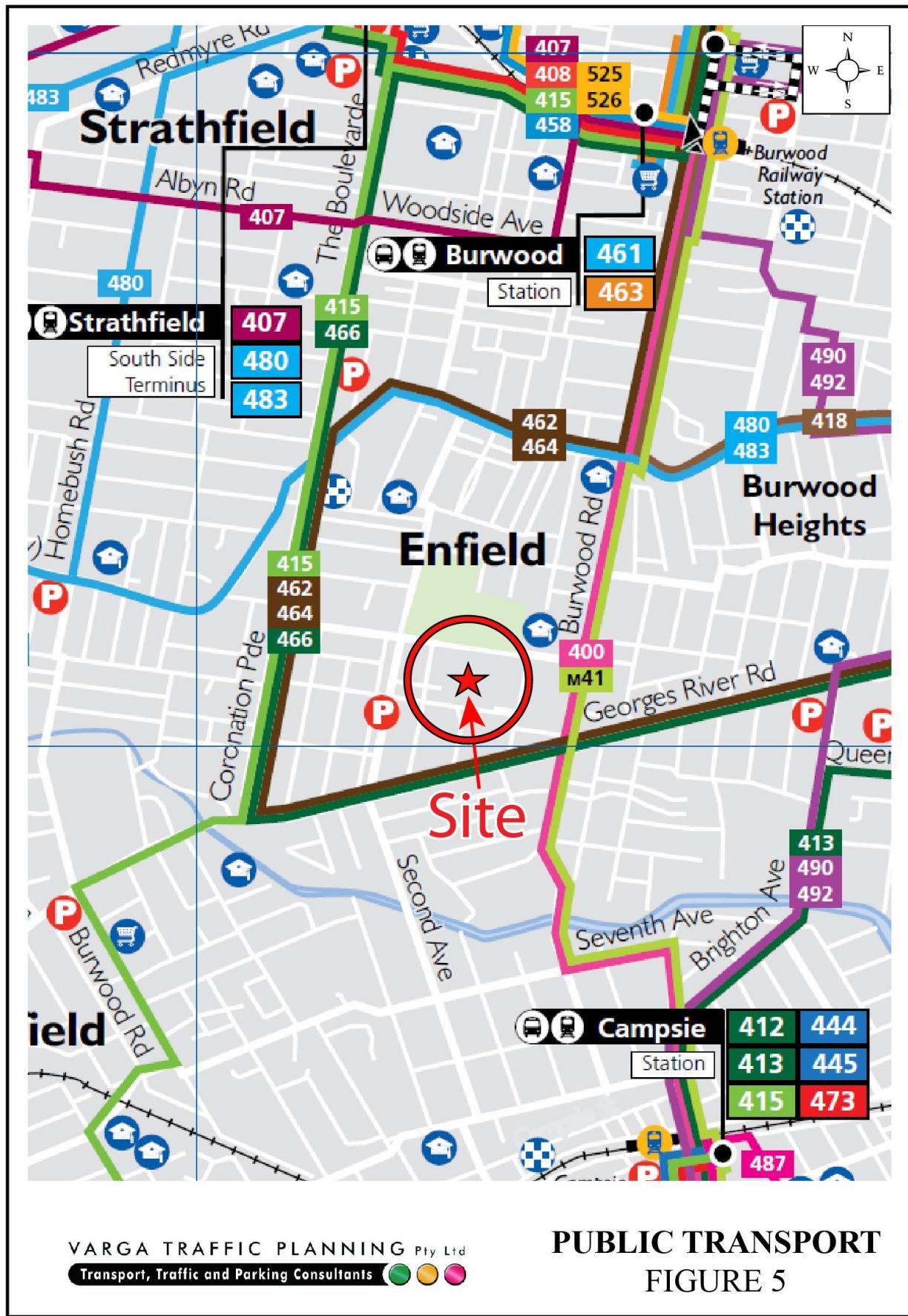
The site is readily accessible by public transport, being located in easy walking distances of regular bus services traversing Coronation Parade, Georges River Road, Burwood Road and/or Liverpool Road, as illustrated on Figure 5. A summary of bus services available in the vicinity of the site on weekdays and weekends is summarised in the table below, revealing that:

- there are approximately 295 inbound bus services and 287 outbound bus services available in the vicinity of the site on weekdays
- weekend bus services comprise approximately 190 services in each direction on Saturday, and approximately 140 bus services on Sundays.

In addition, the bus services provide a direct link to Strathfield, Burwood and Campsie railway stations, connecting with the suburban rail network services, and with Country Link rail services at Strathfield and Central railway stations. Bus No.400 also services the Sydney International and Domestic Airports.

In the circumstances, it is reasonable to conclude that the proposed development site is well served by public transport.





| <b>NUMBER OF NEARBY BUS SERVICES</b> |  |                   |            |            |            |            |            |
|--------------------------------------|--|-------------------|------------|------------|------------|------------|------------|
| <b>Route No.</b>                     | <b>Route</b>   | <b>MON to FRI</b> |            | <b>SAT</b> |            | <b>SUN</b> |            |
|                                      |  | <b>IN</b>         | <b>OUT</b> | <b>IN</b>  | <b>OUT</b> | <b>IN</b>  | <b>OUT</b> |
| 400                                  | Burwood to Bondi Jctn via Airport                      | 52                | 50         | 45         | 45         | 45         | 45         |
| 462, 466 & 468                       | Ashfield to Cabarita & Mortlake                        | 74                | 70         | 46         | 53         | 25         | 31         |
| 415                                  | Chiswick to Campsie                                    | 41                | 41         | 27         | 29         | 11         | 12         |
| 480 & 483                            | Strathfield to City                                    | 70                | 68         | 41         | 47         | 20         | 20         |
| M41*                                 | Marsfield, Ryde, Concord, Enfield, Campsie, Hurstville | 58                | 58         | 33         | 33         | 33         | 33         |
| <b>TOTAL</b>                         |  | <b>295</b>        | <b>287</b> | <b>192</b> | <b>187</b> | <b>134</b> | <b>141</b> |

\*Approximate

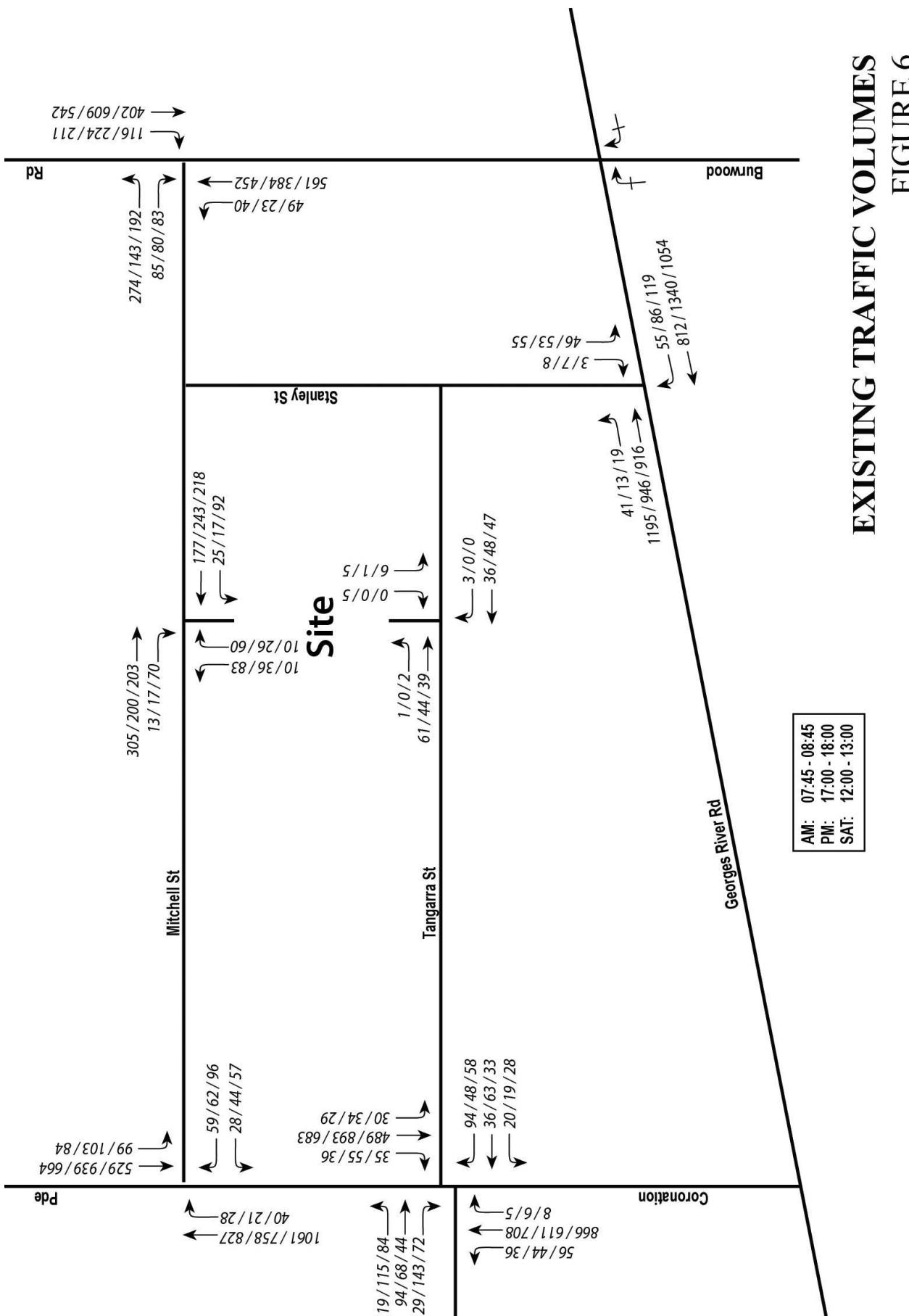
### Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by *updated 2016 peak period traffic surveys* undertaken as part of this amended traffic study. The new traffic surveys were undertaken on Friday 12<sup>th</sup> and Saturday 13<sup>th</sup> August, 2016 during the on-road network peak periods, with the results reproduced in full in Appendix B. The traffic surveys were undertaken at the following intersections:

- Coronation Parade & Mitchell Street (give way)
- Coronation Parade, Dean Street & Tangarra Street (signalised)
- Burwood Road & Mitchell Street (signalised)
- Georges River Road & Stanley Street (give way)
- Mitchell Street & the site access driveway (give way)
- Tangarra Street & the site access driveway (give way)

The results of the traffic surveys are reproduced in full in Appendix B and are summarised on Figure 6, revealing that:

- two-way traffic flows in Georges River Road are typically in the order of 2,000-2,300 vehicles per hour (vph) during the weekday morning and afternoon and Saturday “network” peak periods



- two-way traffic flows in Coronation Parade are lower, typically in the order of 1,600-1,800 vph during the weekday morning and afternoon and Saturday “network” peak periods
- two-way traffic flows in Burwood Road are lower still, typically in the order of 1,100 vph during the weekday morning and afternoon and Saturday “network” peak periods
- two-way traffic flows in Mitchell Street and Tangarra Street past the site frontages are typically in the order of 200-300 vph during the weekday morning and afternoon and Saturday “network” peak periods
- two-way traffic flows in Stanley Street are typically in the order of 150-200 vph during the weekday morning and afternoon and Saturday “network” peak periods.

The traffic surveys also identified the traffic generation characteristics of the existing use of the site by Flower Power as follows:

- cumulative two-way traffic flows into and out of Flower Power site during the weekday morning “network” peak period are typically in the order of 70 vph
- cumulative two-way traffic flows in/out of Flower Power site during the afternoon “network” peak period are typically in the order of 100 vph
- cumulative two-way traffic flows in/out of Flower Power site during the Saturday peak period are typically in the order of 320 vph.

### **Projected Traffic Generation**

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Service’s publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)*.

The RMS *Guidelines* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

**High Density Residential Developments**

0.29 peak hour vehicle trips/dwelling

The RMS Guidelines also make the following observation in respect of high density residential flat buildings:

**Definition**

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level carparking and are located in close proximity to public transport services. The building may contain a component of commercial use.

**Factors**

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

Application of the above “high density” traffic generation rate to the potential for 237 dwellings on the site yields a traffic generation potential of approximately 69 vehicle trips per hour during commuter peak periods.

However, for the purposes of sensitivity testing, the higher traffic generation rates nominated in the RMS Guidelines for *medium density* residential developments have been adopted in this instance, as set out below:

**Medium Density Residential Development**

|                     |   |
|---------------------|---|
| Up to 2-bedrooms:   | 0.4-05 peak hour vehicle trips/dwelling   |
| 3 or more bedrooms: | 0.5-0.65 peak hour vehicle trips/dwelling |

Application of the above “medium density” traffic generation rates to the potential for 237 dwellings on the site yields a traffic generation potential of approximately 112 vehicle trips per hour during commuter peak periods.

It is pertinent to note that the Roads and Maritime Services has recently published updated traffic generation rates for residential developments in its *Technical Direction (TDT 2013/04a)* document. The updated *TDT 2013/04a* data area based on extensive surveys of similar developments and nominate the following traffic generation rates which are applicable to the development proposal:

**High Density Residential Developments**

AM Peak: 0.19 peak hour vehicle trips/unit

PM Peak: 0.15 peak hour vehicle trips/unit

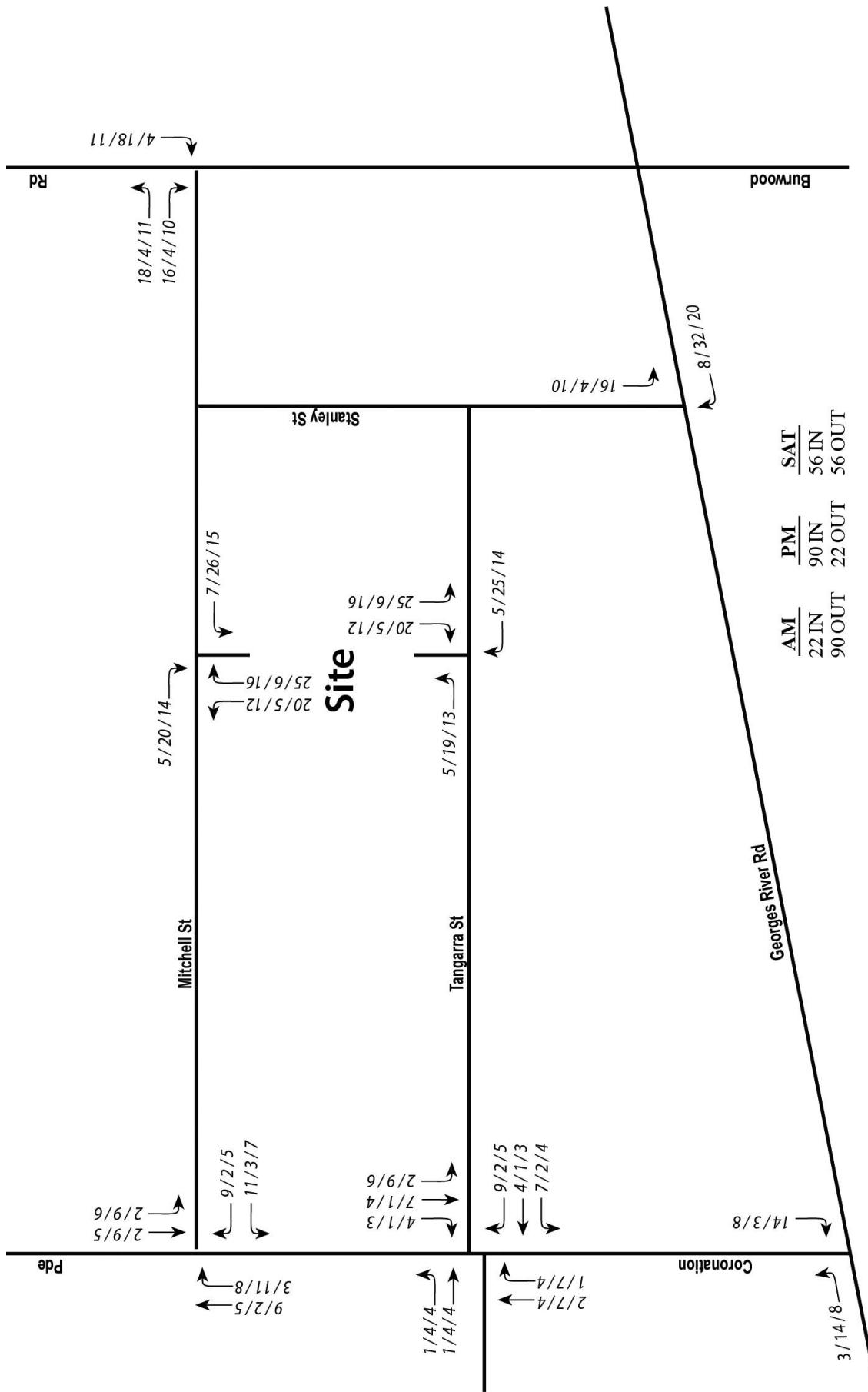
Application of the above traffic generation rates to the planning proposal yields a maximum traffic generation potential of 45 vph and 36 vph during the AM and PM peak periods respectively.

However in order to maintain consistency with the previously submitted traffic report the “old” traffic generation rates for medium density residential developments has been adopted in this analysis.

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential expected to occur as a consequence of the development proposal.

In practice, the proposed residential development is likely to result in a *substantial reduction* in the traffic generation potential of the site, particularly when compared with the reduced traffic generation rates nominated by the RMS in its *Technical Direction TDT 2013/04a* publication.

However, for the purposes of this assessment it has been assumed that *all* of the “medium density residential” projected future traffic flows of 112 peak hour vehicle trips will be new or *additional* to the existing traffic flows currently using the adjacent road network. That projected increase of 112 vph as a consequence of the proposed Masterplan has been added to the adjacent road network in accordance with Journey to Work data estimates and is illustrated on Figure 7.



**PROJECTED ADDITIONAL TRAFFIC VOLUMES**  
**FIGURE 7**

## Traffic Implications - Road Network Capacity

The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA program which is widely used by the RMS and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages.

The results of the SIDRA capacity analysis of the four nearby intersections and the site's two vehicular access driveways are summarised in the tables below, revealing that all intersections will continue to operate at current *Levels of Service* with *minimal* increases in average vehicle delays, if any.

Notwithstanding the above, consideration could be given to the installation of a pedestrian refuge island in Mitchell Street outside the site frontage to cater for the potential increase in pedestrian and cycling activity which may be generated by the site as a consequence of future residents wishing to access the nearby sporting fields. Furthermore, it would be desirable to construct a new 1.2m wide standard footpath along the Tangarra Street site frontage which would connect to the existing footpaths at opposite ends

In summary, subject to the installation of additional facilities for pedestrians in Mitchell Street and Tangarra Street, it is clear that the increase in traffic activity as a consequence of the Masterplan will not have any unacceptable traffic implications in terms of road network capacity, and that no other road improvements or intersection upgrades are required or warranted.

| <b>TABLE 3.1 - RESULTS OF SIDRA ANALYSIS OF CORONATION PARADE &amp; MITCHELL STREET</b> |                                |            |            |  |            |            |
|---|--------------------------------|------------|------------|--|------------|------------|
| <b>Key Indicators</b>   | <b>Existing Traffic Demand</b> |            |            | <b>Projected Additional Traffic Demand</b> |            |            |
|   | <b>AM</b>                      | <b>PM</b>  | <b>SAT</b> | <b>AM</b>                                  | <b>PM</b>  | <b>SAT</b> |
| <b>Level of Service</b>   | A                              | A          | A          | A  | A          | A          |
| <b>Degree of Saturation</b>   | 0.583                          | 0.688      | 0.726      | 0.707                                      | 0.751      | 0.808      |
| <b>Average Vehicle Delay (secs/veh)</b>   | <b>3.0</b>                     | <b>3.7</b> | <b>4.5</b> | <b>4.1</b>                                 | <b>4.6</b> | <b>5.8</b> |

COR\_MITX    COR\_MITP

| <b>TABLE 3.2 - RESULTS OF SIDRA ANALYSIS OF CORONATION PARADE, DEAN STREET &amp; TANGARRA STREET</b> |                                |             |             |  |             |             |
|--|--------------------------------|-------------|-------------|--|-------------|-------------|
| <b>Key Indicators</b>  | <b>Existing Traffic Demand</b> |             |             | <b>Projected Additional Traffic Demand</b> |             |             |
|  | <b>AM</b>                      | <b>PM</b>   | <b>SAT</b>  | <b>AM</b>                                  | <b>PM</b>   | <b>SAT</b>  |
| <b>Level of Service</b>  | B                              | B           | B           | B  | B           | B           |
| <b>Degree of Saturation</b>  | 0.694                          | 0.731       | 0.506       | 0.699                                      | 0.759       | 0.571       |
| <b>Average Vehicle Delay (secs/veh)</b>  | <b>20.0</b>                    | <b>19.4</b> | <b>16.1</b> | <b>20.4</b>                                | <b>20.0</b> | <b>16.3</b> |

COR\_TANX    COR\_TANP

| <b>TABLE 3.3 - RESULTS OF SIDRA ANALYSIS OF BURWOOD ROAD &amp; MITCHELL STREET</b> |                                |             |             |  |             |             |
|--|--------------------------------|-------------|-------------|--|-------------|-------------|
| <b>Key Indicators</b>  | <b>Existing Traffic Demand</b> |             |             | <b>Projected Additional Traffic Demand</b> |             |             |
|  | <b>AM</b>                      | <b>PM</b>   | <b>SAT</b>  | <b>AM</b>                                  | <b>PM</b>   | <b>SAT</b>  |
| <b>Level of Service</b>  | B                              | A           | A           | B  | A           | B           |
| <b>Degree of Saturation</b>  | 0.704                          | 0.694       | 0.719       | 0.752                                      | 0.686       | 0.690       |
| <b>Average Vehicle Delay (secs/veh)</b>  | <b>15.1</b>                    | <b>13.9</b> | <b>14.4</b> | <b>16.2</b>                                | <b>14.3</b> | <b>14.9</b> |

BUR\_MITX    BUR\_MITP

| <b>TABLE 3.4 - RESULTS OF SIDRA ANALYSIS OF GEORGES RIVER ROAD &amp; STANLEY STREET</b> |                                |            |            |  |            |            |
|---|--------------------------------|------------|------------|--|------------|------------|
| <b>Key Indicators</b>   | <b>Existing Traffic Demand</b> |            |            | <b>Projected Additional Traffic Demand</b> |            |            |
|   | <b>AM</b>                      | <b>PM</b>  | <b>SAT</b> | <b>AM</b>                                  | <b>PM</b>  | <b>SAT</b> |
| <b>Level of Service</b>   | A                              | A          | A          | A  | A          | A          |
| <b>Degree of Saturation</b>   | 0.321                          | 0.425      | 0.379      | 0.321                                      | 0.457      | 0.398      |
| <b>Average Vehicle Delay (secs/veh)</b>   | <b>1.6</b>                     | <b>1.9</b> | <b>2.0</b> | <b>1.8</b>                                 | <b>2.4</b> | <b>2.2</b> |

GEO\_STAX                                    GEO\_STAP

| <b>TABLE 3.5 - RESULTS OF SIDRA ANALYSIS OF MITCHELL STREET &amp; PROPOSED SITE ACCESS</b> |                                |            |            |  |            |            |
|--|--------------------------------|------------|------------|--|------------|------------|
| <b>Key Indicators</b>  | <b>Existing Traffic Demand</b> |            |            | <b>Projected Additional Traffic Demand</b> |            |            |
|  | <b>AM</b>                      | <b>PM</b>  | <b>SAT</b> | <b>AM</b>                                  | <b>PM</b>  | <b>SAT</b> |
| <b>Level of Service</b>  | A                              | A          | A          | A  | A          | A          |
| <b>Degree of Saturation</b>  | 0.220                          | 0.194      | 0.228      | 0.217                                      | 0.192      | 0.171      |
| <b>Average Vehicle Delay (secs/veh)</b>  | <b>3.7</b>                     | <b>3.5</b> | <b>4.2</b> | <b>3.3</b>                                 | <b>3.8</b> | <b>3.5</b> |

MIT\_ACCX                                    MIT\_ACCP

| <b>TABLE 3.6 - RESULTS OF SIDRA ANALYSIS OF TANGARRA STREET &amp; PROPOSED SITE ACCESS</b> |                                |            |            |  |            |            |
|--|--------------------------------|------------|------------|--|------------|------------|
| <b>Key Indicators</b>  | <b>Existing Traffic Demand</b> |            |            | <b>Projected Additional Traffic Demand</b> |            |            |
|  | <b>AM</b>                      | <b>PM</b>  | <b>SAT</b> | <b>AM</b>                                  | <b>PM</b>  | <b>SAT</b> |
| <b>Level of Service</b>  | A                              | A          | A          | A  | A          | A          |
| <b>Degree of Saturation</b>  | 0.032                          | 0.025      | 0.025      | 0.036                                      | 0.041      | 0.034      |
| <b>Average Vehicle Delay (secs/veh)</b>  | <b>0.3</b>                     | <b>0.2</b> | <b>0.3</b> | <b>0.6</b>                                 | <b>2.4</b> | <b>1.6</b> |

TAN\_ACCX                                    TAN\_ACCP

## Criteria for Interpreting Results of Sidra Analysis

### 1. *Level of Service (LOS)*

| <b>LOS</b> | <b>Traffic Signals and Roundabouts</b>   | <b>Give Way and Stop Signs</b>                  |
|------------|--|---|
| 'A'        | Good operation.  | Good operation.                                 |
| 'B'        | Good with acceptable delays and spare capacity.  | Acceptable delays and spare capacity.           |
| 'C'        | Satisfactory.  | Satisfactory but accident study required.       |
| 'D'        | Operating near capacity.   | Near capacity and accident study required.      |
| 'E'        | At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode. | At capacity and requires other control mode.    |
| 'F'        | Unsatisfactory and requires additional capacity.   | Unsatisfactory and requires other control mode. |

### 2. *Average Vehicle Delay (AVD)*

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

| <b>Level of Service</b> | <b>Average Delay per Vehicle (secs/veh)</b> | <b>Traffic Signals, Roundabout</b>  | <b>Give Way and Stop Signs</b>               |
|-------------------------|---|---|--|
| A                       | less than 14                                | Good operation.   | Good operation.                              |
| B                       | 15 to 28                                    | Good with acceptable delays and spare capacity.   | Acceptable delays and spare capacity.        |
| C                       | 29 to 42                                    | Satisfactory.   | Satisfactory but accident study required.    |
| D                       | 43 to 56                                    | Operating near capacity.  | Near capacity and accident study required.   |
| E                       | 57 to 70                                    | At capacity; at signals incidents will cause excessive delays.<br>Roundabouts require other control mode. | At capacity and requires other control mode. |

### 3. *Degree of Saturation (DS)*

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals<sup>1</sup> both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

<sup>1</sup>

*The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.*

## 4. PARKING IMPLICATIONS

### Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are also illustrated on Figure 4 and comprise:

- NO STOPPING restrictions along a small section on the northern side of Tangarra Street East, just west of the site
- generally UNRESTRICTED kerbside parking elsewhere in Tangarra Street East as well as both sides of Mitchell Street and throughout the local area, including along both site frontages.

### Off-Street Parking Provisions

The off-street parking requirements applicable to the Planning Proposal are specified in Council's *Development Control Plan Section 4.6, Table 4 – Car Parking Rates in Residential Zones* document in the following terms:

#### **Multi-Dwelling Housing and Residential Flat Buildings (in Residential Zones)**

|                       |                         |
|-----------------------|-------------------------|
| 1 bedroom apartments: | 1 space per dwelling    |
| 2 bedroom apartments: | 1 space per dwelling    |
| Visitors:             | 1 space per 5 dwellings |

Application of the above parking requirements to the potential for 239 dwellings on the site yields an off-street parking requirement of 284 parking spaces as set out below:

|                            |                     |
|----------------------------|---------------------|
| Residents (237 dwellings): | 237.0 spaces        |
| Visitors:                  | 47.4 spaces         |
| <b>TOTAL:</b>              | <b>284.4 spaces</b> |

Whilst the number of car parking spaces to be provided is not yet known, it is envisaged that the parking requirements specified in Council's *DCP* could be satisfied through the provision of basement car parking, however this would be subject to a future development application.

Future vehicular access to the basement car parking facility is likely to be provided via two separate two-way driveways; one located at the eastern end of the Mitchell Street site frontage, the other located at the eastern end of the Tangarra Street East site frontage. All passenger vehicles will be able to enter and exit the site in a forward direction at all times.

The geometric design layout of the proposed car parking facilities will ultimately be designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* in respect of parking bay dimensions, ramp gradients and aisle widths.

### **Off-Street Bicycle Parking Provisions**

The off-street bicycle parking requirements for the proposed development have been assessed using the NSW Government's *Planning Guidelines for Walking & Cycling – Table 1* which specifies the following rates:

#### **Residential Housing**

|            |  |
|------------|--|
| Residents: | 20%-30% of the total number of dwellings |
| Visitors:  | 5%-10% of the total number of dwellings  |

Application of the above bicycle parking requirements to the potential for 237 dwellings on the site yields an off-street bicycle parking requirement of between 59 spaces and 95 spaces.

Whilst the number of bicycle parking spaces to be provided is also not yet known, it is envisaged that the parking requirements specified in the NSW Government's *Planning Guidelines for Walking & Cycling – Table 1* could be satisfied throughout the site including within the basement parking areas.

In summary, the proposed parking facilities can be designed to satisfy the relevant requirements specified in both Council's Parking Code as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking implications.

**APPENDIX A**

**MASTERPLAN CONCEPT PLAN**

## NOTES

-PRELIMINARY MASTERPLAN CONCEPT ONLY -  
SUBJECT TO CONSULTANT INPUT, REVIEW OF FUTURE SURVEY INFORMATION

YIELD ANALYSIS  
BLOCK A-PART 2/3 STOREY RESIDENTIAL BUILDING  
50 UNITS

BLOCK B-PART 2/3 STOREY RESIDENTIAL BUILDING  
33 UNITS

BLOCK C-3 STOREY RESIDENTIAL BUILDING  
34 UNITS

BLOCK D-PART 2/3 STOREY RESIDENTIAL BUILDING  
30 UNITS

BLOCK E-3 STOREY RESIDENTIAL BUILDING  
34 UNITS

BLOCK F-PART 2/3 STOREY RESIDENTIAL BUILDING  
21 UNITS

BLOCK G-3 STOREY RESIDENTIAL BUILDING  
21 UNITS

BLOCK H-3 STOREY RESIDENTIAL BUILDING  
34 UNITS

UNIT MIX  
1 BEDROOM (21%)  
2 BEDROOM (13%)

FLOOR SPACE RATIO

RI ZONE 1.21

## CONTROL

ADG REQUIRES

MASTERPLAN PROVIDES

## BUILDING SEPARATION

- TO SIDE BOUNDARIES
  - 6 METRE SETBACK TO HABITABLE ROOM
  - 3 METRE SETBACK TO NON-HABITABLE ROOMS
  - ADDITIONAL 3 METRES TO LOW DENSITY ZONE
  - NO SETBACK FOR BLANK WALLS BETWEEN BUILDINGS ON SITE
  - 12M SEPARATION BETWEEN HABITABLE
  - 9M SEPARATION BETWEEN HABITABLE AND NON-HABITABLE
  - 6M SEPARATION BETWEEN NON-HABITABLE
  - NO SETBACK FOR BLANK WALLS
- THE SETBACKS AND SEPARATION DISTANCES DISCLOSED, BUILDING B AND BUILDING G WHERE HABITABLE ROOMS ARE ADJACENT TO A LOW DENSITY ZONE ARE SETBACK AN ADDITIONAL 3 METRES

## SOLAR ACCESS

MN 10% OF APARTMENTS RECEIVE 2 HOURS OF SOLAR ACCESS IN MID WINTER.  
MAN 10% OF APARTMENTS RECEIVE NO SOLAR CONSIDER SOLAR ACCESS TO NEIGHBOURS.

THE CONFIGURATION OF THE BUILDINGS AND APARTMENTS ENABLES MN 10% SOLAR ACCESS ALL.

NEIGHBOURING PROPERTIES WILL RETAIN 3 HOURS SOLAR ACCESS IN MID WINTER.

## NATURAL VENTILATION

MN 60% OF APARTMENTS TO BE CROSS VENTILATED

MN 60% WILL ACHIEVE CROSS VENTILATION

## COMMUNAL OPEN SPACE

MN 25% OF SITE AREA WITH 50% RECEIVING A MINIMUM OF 2 HOURS DIRECT SUNLIGHT

SITE REQUIRES 3,523M<sup>2</sup>. THIS IS PROVIDED.

## DEEP SOIL

MN 18' WITH 6M DIMENSION

SITE REQUIRES 1,23M<sup>2</sup>. THIS IS PROVIDED.

## CEILING HEIGHTS

FLOOR TO CEILING - MN 2.7M

MN 2.7M FLOOR TO CEILING HEIGHTS PROVIDED

## APARTMENT SIZE

### MINIMUM SIZES:

- STUDIO - 36M<sup>2</sup>
- ONE BED - 56M<sup>2</sup>
- TWO BED - 76M<sup>2</sup>
- THREE BED - 96M<sup>2</sup>

ADD EXTRA 5M<sup>2</sup> FOR ADDITIONAL BATHROOMS

ALL INDICATIVE UNITS MEET THE MINIMUM REQUIREMENTS.

## ROOM SIZES

### MINIMUM ROOM SIZES:

- MASTER BED - 16M<sup>2</sup>
- OTHER BEDROOMS - 8M<sup>2</sup>
- BEDROOM MIN DIMENSION - 3M
- LIVING ROOMS OR COMBINED LIVING/DINING

- 0 STUDIO/ONE - 3.6M
- 0 TWO/THREE - 4M
- 0 CROSS OVERS - 4M

ALL INDICATIVE UNITS MEET THE MINIMUM REQUIREMENTS.

## PRIVATE OPEN SPACE

- MN BALCONY SIZE AND WIDTH
- STUDIO - 4M<sup>2</sup> & MIN WIDTH
  - ONE BED - 6M<sup>2</sup> & MIN WIDTH OF 2M
  - TWO BED - 10M<sup>2</sup> & WIDTH OF 2M
  - THREE BED - 12M<sup>2</sup> & WIDTH OF 2.4M

ALL INDICATIVE UNITS MEET THE MINIMUM REQUIREMENTS.

## COMMON CIRCULATION

- LIMITS UNITS PER FLOOR OFF CORE TO 8M MAX 1 UNITS PER CORE

## STORAGE

PROVIDE STORAGE AREAS AS FOLLOWS:  
STUDIO - 4M<sup>3</sup>  
ONE BED - 6M<sup>3</sup>  
TWO BED - 9M<sup>3</sup>  
THREE BED - 10M<sup>3</sup>  
AT LEAST 50% TO BE LOCATED WITHIN THE APARTMENT.

ALL INDICATIVE UNITS MEET THE MINIMUM REQUIREMENTS.

## UNIVERSAL DESIGN

MINIMUM OF 20% OF APARTMENTS TO INCORPORATE LIVEABLE HOUSING GUIDELINES SILVER LEVEL UNIVERSAL DESIGN FEATURES.

## LEGEND

■ 1 BEDROOM

■ 2 BEDROOM

— PEDESTRIAN LINK

— SETBACK

▲ ACCESS POINT



FLOWER POWER GROUP, 21 MITCHELL STREET, CROYDON PARK  
**CONCEPT MASTER PLAN**  
SCALE 1 : 500 @ A1 - APRIL 2016



**APPENDIX B**

**TRAFFIC SURVEY DATA**







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016

### Intersection Details

Obtained via satellite

May be incorrect

**AM PEAK HOUR**  
**0745 - 0845**



**Coronation Pde**

| T   | L   |
|-----|-----|
| 529 | 99  |
| 939 | 103 |

| R  | L  |
|----|----|
| 62 | 59 |
| PM | AM |
| 44 | 28 |

**Mitchell St**

**T R**

**758 21 PM**

**1061 40 AM**

**PM PEAK HOUR**  
**1700 - 1800**

**Weather >>**



**Coronation Pde**





# R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
 Job No/Name: 6182 CROYDON PARK Flower Power  
 Day/Date : Saturday 13th August 2016

| Peds        | NORTH        | EAST         | SOUTH        |     |
|-------------|--------------|--------------|--------------|-----|
| Coronation  | Mitchell St  | Coronation   |              |     |
| Time Period | UnClassified | UnClassified | UnClassified | TOT |
| 1000 - 1015 | 0            | 0            | 0            | 0   |
| 1015 - 1030 | 0            | 0            | 0            | 0   |
| 1030 - 1045 | 0            | 0            | 0            | 0   |
| 1045 - 1100 | 0            | 0            | 0            | 0   |
| 1100 - 1115 | 0            | 2            | 0            | 2   |
| 1115 - 1130 | 0            | 2            | 0            | 2   |
| 1130 - 1145 | 0            | 0            | 0            | 0   |
| 1145 - 1200 | 0            | 2            | 0            | 2   |
| 1200 - 1215 | 0            | 0            | 0            | 0   |
| 1215 - 1230 | 0            | 0            | 0            | 0   |
| 1230 - 1245 | 0            | 1            | 0            | 1   |
| 1245 - 1300 | 0            | 0            | 0            | 0   |
| 1300 - 1315 | 0            | 0            | 0            | 0   |
| 1315 - 1330 | 0            | 0            | 0            | 0   |
| 1330 - 1345 | 0            | 3            | 0            | 3   |
| 1345 - 1400 | 0            | 0            | 0            | 0   |
| 1400 - 1415 | 0            | 0            | 0            | 0   |
| 1415 - 1430 | 0            | 0            | 0            | 0   |
| 1430 - 1445 | 0            | 1            | 0            | 1   |
| 1445 - 1500 | 0            | 2            | 0            | 2   |
| Period End  | 0            | 13           | 0            | 13  |

| Peds        | NORTH        | EAST         | SOUTH        |     |
|-------------|--------------|--------------|--------------|-----|
| Coronation  | Mitchell St  | Coronation   |              |     |
| Peak Period | UnClassified | UnClassified | UnClassified | TOT |
| 1000 - 1100 | 0            | 0            | 0            | 0   |
| 1015 - 1115 | 0            | 2            | 0            | 2   |
| 1030 - 1130 | 0            | 7            | 0            | 7   |
| 1045 - 1145 | 0            | 7            | 0            | 7   |
| 1100 - 1200 | 0            | 7            | 0            | 7   |
| 1115 - 1215 | 0            | 5            | 0            | 5   |
| 1130 - 1230 | 0            | 6            | 0            | 6   |
| 1145 - 1245 | 0            | 6            | 0            | 6   |
| 1200 - 1300 | 0            | 4            | 0            | 4   |
| 1215 - 1315 | 0            | 4            | 0            | 4   |
| 1230 - 1330 | 0            | 1            | 0            | 1   |
| 1245 - 1345 | 0            | 3            | 0            | 3   |
| 1300 - 1400 | 0            | 3            | 0            | 3   |
| 1315 - 1415 | 0            | 3            | 0            | 3   |
| 1330 - 1430 | 0            | 3            | 0            | 3   |
| 1345 - 1445 | 0            | 0            | 0            | 0   |
| 1400 - 1500 | 0            | 3            | 0            | 3   |
| PEAK HOUR   | 0            | 4            | 0            | 4   |





## R.O.A.R DATA

*Reliable, Original & Authentic Results*

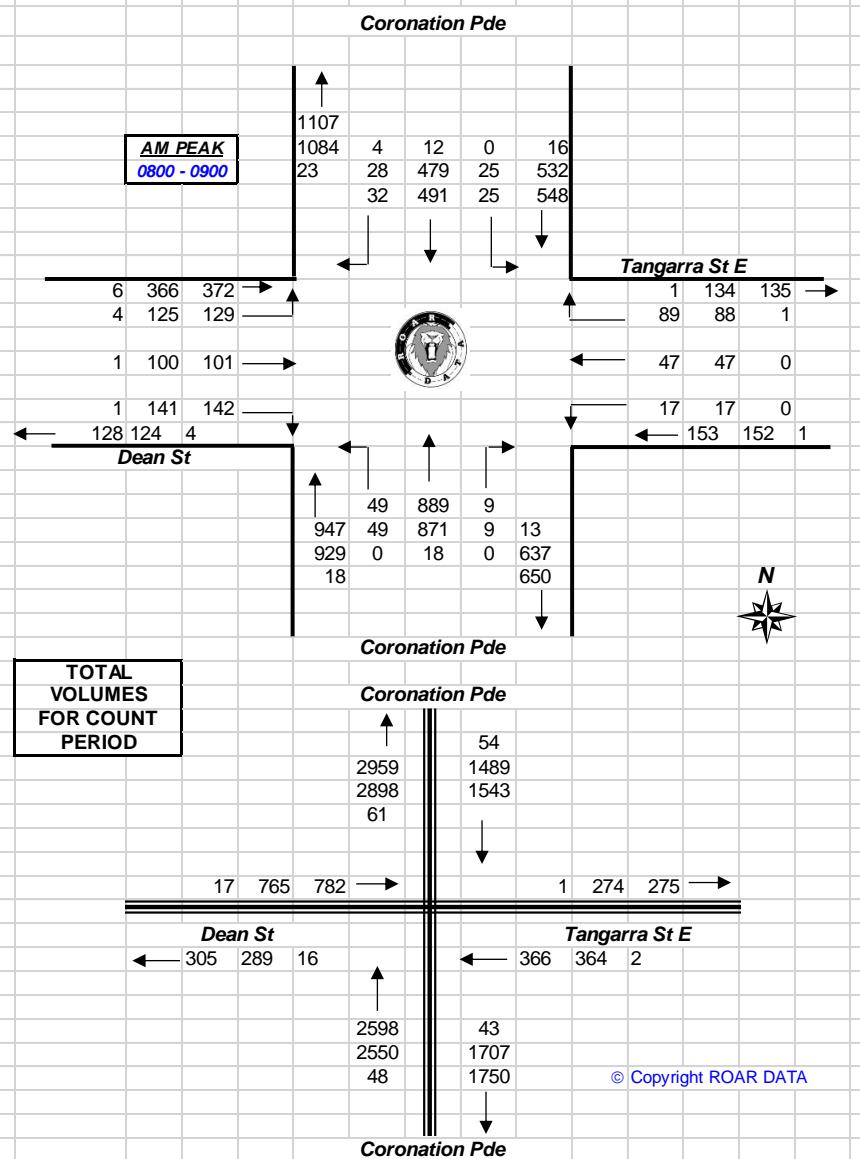
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
 Job No/Name : 6182 CROYDON PARK Flower Power  
 Day/Date : Friday 12th August 2016

| Peds        | NORTH          | WEST         | SOUTH          | EAST          |     |
|-------------|----------------|--------------|----------------|---------------|-----|
| Time Per    | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E | TOT |
|             | UNCLASSIFIED   | UNCLASSIFIED | UNCLASSIFIED   | UNCLASSIFIED  |     |
| 0700 - 0715 | 0              | 0            | 5              | 5             | 10  |
| 0715 - 0730 | 0              | 0            | 5              | 5             | 10  |
| 0730 - 0745 | 0              | 1            | 6              | 6             | 13  |
| 0745 - 0800 | 0              | 0            | 9              | 1             | 10  |
| 0800 - 0815 | 0              | 0            | 9              | 0             | 9   |
| 0815 - 0830 | 0              | 1            | 6              | 0             | 7   |
| 0830 - 0845 | 0              | 0            | 3              | 0             | 3   |
| 0845 - 0900 | 0              | 0            | 9              | 1             | 10  |
| 0900 - 0915 | 0              | 0            | 7              | 0             | 7   |
| 0915 - 0930 | 1              | 0            | 10             | 0             | 11  |
| 0930 - 0945 | 0              | 0            | 0              | 0             | 0   |
| 0945 - 1000 | 0              | 0            | 2              | 1             | 3   |
| Period End  | 1              | 2            | 71             | 19            | 93  |

| Peds               | NORTH          | WEST         | SOUTH          | EAST          |           |
|--------------------|----------------|--------------|----------------|---------------|-----------|
| Peak Per           | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E | TOT       |
|                    | UNCLASSIFIED   | UNCLASSIFIED | UNCLASSIFIED   | UNCLASSIFIED  |           |
| 0700 - 0800        | 0              | 1            | 25             | 17            | 43        |
| 0715 - 0815        | 0              | 1            | 29             | 12            | 42        |
| 0730 - 0830        | 0              | 2            | 30             | 7             | 39        |
| 0745 - 0845        | 0              | 1            | 27             | 1             | 29        |
| <b>0800 - 0900</b> | <b>0</b>       | <b>1</b>     | <b>27</b>      | <b>1</b>      | <b>29</b> |
| 0815 - 0915        | 0              | 1            | 25             | 1             | 27        |
| 0830 - 0930        | 1              | 0            | 29             | 1             | 31        |
| 0845 - 0945        | 1              | 0            | 26             | 1             | 28        |
| 0900 - 1000        | 1              | 0            | 19             | 1             | 21        |

| PEAK HR | 0 | 1 | 27 | 1 | 29 |
|---------|---|---|----|---|----|
|         | 1 | 2 | 3  |   |    |



© Copyright ROAR DATA





## R.O.A.R DATA

*Reliable, Original & Authentic Results*

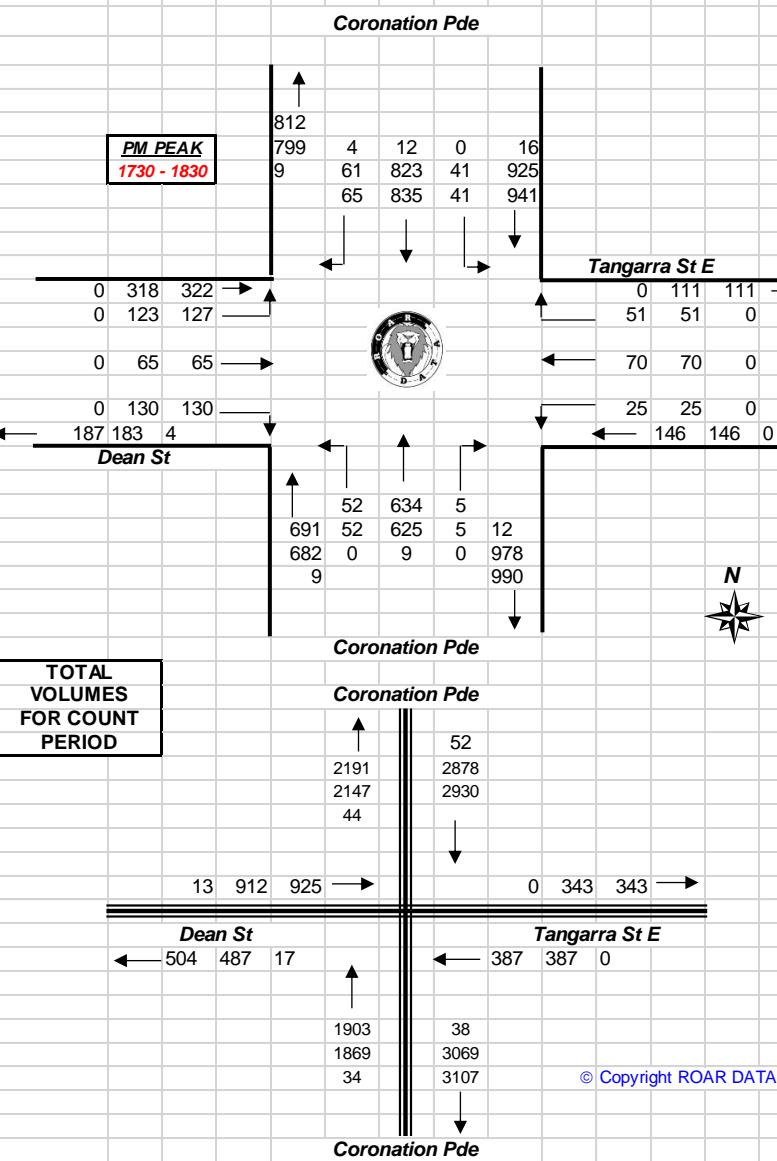
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
 Job No/Name : 6182 CROYDON PARK Flower Power  
 Day/Date : Friday 12th August 2016

| Peds        | NORTH          | WEST         | SOUTH          | EAST          |     |
|-------------|----------------|--------------|----------------|---------------|-----|
| Time Per    | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E |     |
|             | UNCLASSIFIED   | UNCLASSIFIED | UNCLASSIFIED   | UNCLASSIFIED  | TOT |
| 1530 - 1545 | 0              | 1            | 5              | 1             | 7   |
| 1545 - 1600 | 0              | 1            | 7              | 1             | 9   |
| 1600 - 1615 | 0              | 0            | 5              | 0             | 5   |
| 1615 - 1630 | 0              | 1            | 6              | 1             | 8   |
| 1630 - 1645 | 0              | 2            | 6              | 1             | 9   |
| 1645 - 1700 | 0              | 0            | 3              | 1             | 4   |
| 1700 - 1715 | 0              | 0            | 3              | 0             | 3   |
| 1715 - 1730 | 0              | 0            | 3              | 0             | 3   |
| 1730 - 1745 | 0              | 0            | 4              | 1             | 5   |
| 1745 - 1800 | 0              | 0            | 4              | 0             | 4   |
| 1800 - 1815 | 0              | 0            | 7              | 1             | 8   |
| 1815 - 1830 | 0              | 0            | 8              | 2             | 10  |
| Period End  | 0              | 5            | 61             | 9             | 75  |

| Peds        | NORTH          | WEST         | SOUTH          | EAST          |     |
|-------------|----------------|--------------|----------------|---------------|-----|
| Peak Per    | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E |     |
|             | UNCLASSIFIED   | UNCLASSIFIED | UNCLASSIFIED   | UNCLASSIFIED  | TOT |
| 1530 - 1630 | 0              | 3            | 23             | 3             | 29  |
| 1545 - 1645 | 0              | 4            | 24             | 3             | 31  |
| 1600 - 1700 | 0              | 3            | 20             | 3             | 26  |
| 1615 - 1715 | 0              | 3            | 18             | 3             | 24  |
| 1630 - 1730 | 0              | 2            | 15             | 2             | 19  |
| 1645 - 1745 | 0              | 0            | 13             | 2             | 15  |
| 1700 - 1800 | 0              | 0            | 14             | 1             | 15  |
| 1715 - 1815 | 0              | 0            | 18             | 2             | 20  |
| 1730 - 1830 | 0              | 0            | 23             | 4             | 27  |

| PEAK HR | 0 | 0 | 23 | 4 | 27 |
|---------|---|---|----|---|----|
| 1       | 2 | 3 |    |   |    |



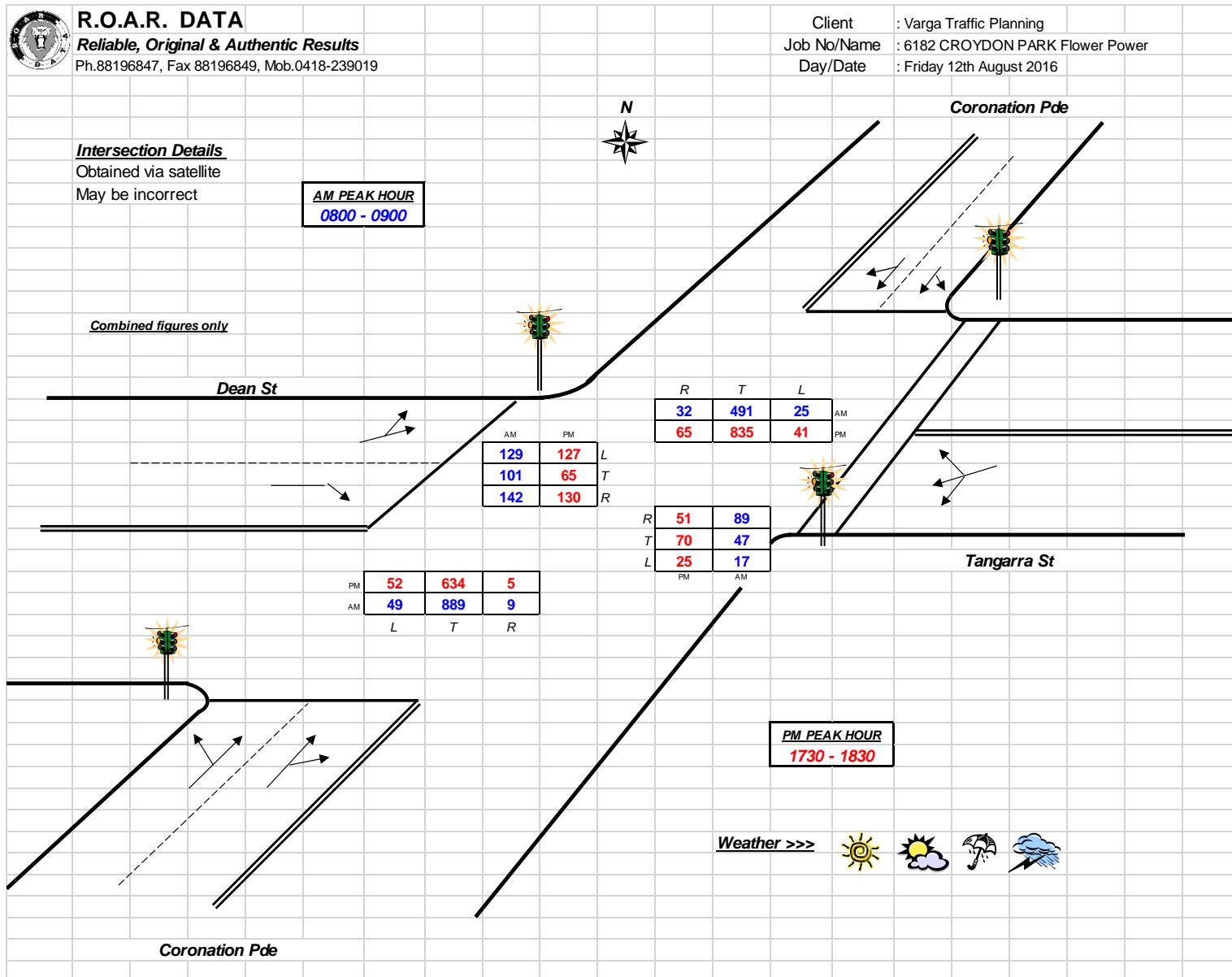


## R.O.A.R. DATA

**Reliable, Original & Authentic Results**

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016





## R.O.A.R. DATA

**Reliable, Original & Authentic Results**

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 6182 CROYDON PARK Flower Power

Day/Date : Saturday 13th August 2016

| Lights      | NORTH          |      |     | WEST    |     |     | SOUTH          |      |    | EAST          |     |     | TOT  |
|-------------|----------------|------|-----|---------|-----|-----|----------------|------|----|---------------|-----|-----|------|
|             | Coronation Pde |      |     | Dean St |     |     | Coronation Pde |      |    | Tangarra St E |     |     |      |
|             | Time Period    | L    | I   | R       | L   | I   | R              | L    | I  | R             | L   | I   | R    |
| 1000 - 1015 | 6              | 133  | 12  | 23      | 6   | 8   | 3              | 152  | 0  | 3             | 10  | 11  | 367  |
| 1015 - 1030 | 14             | 158  | 10  | 14      | 10  | 13  | 8              | 201  | 2  | 5             | 8   | 14  | 457  |
| 1030 - 1045 | 3              | 138  | 8   | 20      | 10  | 15  | 14             | 159  | 3  | 3             | 4   | 10  | 387  |
| 1045 - 1100 | 7              | 142  | 8   | 19      | 17  | 14  | 7              | 138  | 2  | 2             | 9   | 14  | 379  |
| 1100 - 1115 | 7              | 161  | 10  | 22      | 15  | 16  | 9              | 182  | 1  | 8             | 12  | 14  | 457  |
| 1115 - 1130 | 7              | 150  | 11  | 28      | 11  | 16  | 8              | 171  | 2  | 7             | 11  | 15  | 437  |
| 1130 - 1145 | 7              | 144  | 9   | 29      | 17  | 16  | 6              | 156  | 2  | 2             | 11  | 14  | 413  |
| 1145 - 1200 | 16             | 162  | 9   | 20      | 14  | 23  | 5              | 171  | 1  | 1             | 10  | 11  | 443  |
| 1200 - 1215 | 6              | 175  | 6   | 25      | 10  | 21  | 10             | 169  | 0  | 7             | 5   | 14  | 448  |
| 1215 - 1230 | 7              | 174  | 11  | 14      | 13  | 17  | 5              | 184  | 2  | 9             | 8   | 17  | 461  |
| 1230 - 1245 | 9              | 167  | 10  | 17      | 9   | 18  | 14             | 178  | 2  | 6             | 8   | 9   | 447  |
| 1245 - 1300 | 7              | 160  | 7   | 26      | 12  | 16  | 5              | 164  | 1  | 6             | 12  | 18  | 434  |
| 1300 - 1315 | 9              | 203  | 10  | 26      | 14  | 16  | 11             | 173  | 2  | 2             | 8   | 9   | 483  |
| 1315 - 1330 | 6              | 155  | 9   | 24      | 14  | 15  | 9              | 181  | 0  | 4             | 4   | 8   | 429  |
| 1330 - 1345 | 9              | 205  | 8   | 24      | 9   | 16  | 11             | 201  | 2  | 6             | 9   | 12  | 512  |
| 1345 - 1400 | 6              | 148  | 4   | 20      | 6   | 18  | 10             | 152  | 0  | 6             | 8   | 7   | 385  |
| 1400 - 1415 | 9              | 227  | 12  | 18      | 22  | 20  | 19             | 175  | 2  | 6             | 18  | 15  | 543  |
| 1415 - 1430 | 7              | 131  | 11  | 11      | 11  | 12  | 9              | 112  | 2  | 2             | 6   | 6   | 320  |
| 1430 - 1445 | 3              | 173  | 12  | 21      | 11  | 10  | 7              | 165  | 3  | 5             | 9   | 11  | 430  |
| 1445 - 1500 | 8              | 192  | 9   | 23      | 9   | 18  | 15             | 214  | 1  | 3             | 14  | 7   | 513  |
| Period End  | 153            | 3298 | 186 | 424     | 240 | 318 | 185            | 3398 | 30 | 93            | 184 | 236 | 8745 |

| Lights      | NORTH          |     |    | WEST    |    |    | SOUTH          |     |   | EAST          |    |    | TOT  |
|-------------|----------------|-----|----|---------|----|----|----------------|-----|---|---------------|----|----|------|
|             | Coronation Pde |     |    | Dean St |    |    | Coronation Pde |     |   | Tangarra St E |    |    |      |
| Peak Period | L              | I   | R  | L       | I  | R  | L              | I   | R | L             | I  | R  |      |
| 1000 - 1100 | 30             | 571 | 38 | 76      | 43 | 50 | 32             | 650 | 7 | 13            | 31 | 49 | 1590 |
| 1015 - 1115 | 31             | 599 | 36 | 75      | 52 | 58 | 38             | 680 | 8 | 18            | 33 | 52 | 1680 |
| 1030 - 1130 | 24             | 591 | 37 | 89      | 53 | 61 | 38             | 650 | 8 | 20            | 36 | 53 | 1660 |
| 1045 - 1145 | 21             | 453 | 29 | 69      | 43 | 46 | 24             | 491 | 5 | 17            | 32 | 43 | 1273 |
| 1100 - 1200 | 14             | 311 | 21 | 50      | 26 | 32 | 17             | 353 | 3 | 15            | 23 | 29 | 894  |
| 1115 - 1215 | 7              | 150 | 11 | 28      | 11 | 16 | 8              | 171 | 2 | 7             | 11 | 15 | 437  |
| 1130 - 1230 | 36             | 655 | 35 | 88      | 54 | 77 | 26             | 680 | 5 | 19            | 34 | 56 | 1765 |
| 1145 - 1245 | 38             | 678 | 36 | 76      | 46 | 79 | 34             | 702 | 5 | 23            | 31 | 51 | 1799 |
| 1200 - 1300 | 29             | 676 | 34 | 82      | 44 | 72 | 34             | 695 | 5 | 28            | 33 | 58 | 1790 |
| 1215 - 1315 | 32             | 704 | 38 | 83      | 48 | 67 | 35             | 699 | 7 | 23            | 36 | 53 | 1825 |
| 1230 - 1330 | 31             | 685 | 36 | 93      | 49 | 65 | 39             | 696 | 5 | 18            | 32 | 44 | 1793 |
| 1245 - 1345 | 31             | 723 | 34 | 100     | 49 | 63 | 36             | 719 | 5 | 18            | 33 | 47 | 1858 |
| 1300 - 1400 | 30             | 711 | 31 | 94      | 43 | 65 | 41             | 707 | 4 | 18            | 29 | 36 | 1809 |
| 1315 - 1415 | 30             | 735 | 33 | 86      | 51 | 69 | 49             | 709 | 4 | 22            | 39 | 42 | 1869 |
| 1330 - 1430 | 31             | 711 | 35 | 73      | 48 | 66 | 49             | 640 | 6 | 20            | 41 | 40 | 1760 |
| 1345 - 1445 | 25             | 679 | 39 | 70      | 50 | 60 | 45             | 604 | 7 | 19            | 41 | 39 | 1678 |
| 1400 - 1500 | 27             | 723 | 44 | 73      | 53 | 60 | 50             | 666 | 8 | 16            | 47 | 39 | 1806 |
| PEAK HOUR   | 30             | 735 | 33 | 86      | 51 | 69 | 49             | 709 | 4 | 22            | 39 | 42 | 1869 |



## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 6182 CROYDON PARK Flower Power

Day/Date : Saturday 13th August 2016

| Heavies     | NORTH          |    |    | WEST    |   |   | SOUTH          |    |   | EAST          |   |   | TOT |  |
|-------------|----------------|----|----|---------|---|---|----------------|----|---|---------------|---|---|-----|--|
|             | Coronation Pde |    |    | Dean St |   |   | Coronation Pde |    |   | Tangarra St E |   |   |     |  |
|             | L              | I  | R  | L       | I | R | L              | I  | R | L             | I | R |     |  |
| Time Period |                |    |    |         |   |   |                |    |   |               |   |   |     |  |
| 1000 - 1015 | 0              | 2  | 1  | 2       | 0 | 0 | 0              | 1  | 0 | 0             | 0 | 0 | 6   |  |
| 1015 - 1030 | 0              | 1  | 0  | 0       | 0 | 0 | 0              | 3  | 0 | 0             | 0 | 0 | 4   |  |
| 1030 - 1045 | 0              | 1  | 1  | 1       | 0 | 0 | 0              | 0  | 0 | 0             | 0 | 0 | 3   |  |
| 1045 - 1100 | 0              | 2  | 1  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 5   |  |
| 1100 - 1115 | 0              | 2  | 1  | 1       | 0 | 0 | 1              | 3  | 0 | 0             | 0 | 0 | 8   |  |
| 1115 - 1130 | 0              | 1  | 0  | 0       | 0 | 1 | 0              | 1  | 0 | 0             | 0 | 0 | 3   |  |
| 1130 - 1145 | 0              | 1  | 0  | 2       | 0 | 0 | 0              | 1  | 0 | 0             | 0 | 0 | 4   |  |
| 1145 - 1200 | 0              | 1  | 2  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 5   |  |
| 1200 - 1215 | 0              | 0  | 0  | 1       | 0 | 0 | 0              | 0  | 0 | 0             | 0 | 0 | 1   |  |
| 1215 - 1230 | 0              | 2  | 1  | 0       | 0 | 0 | 0              | 3  | 0 | 0             | 0 | 0 | 6   |  |
| 1230 - 1245 | 0              | 2  | 0  | 1       | 0 | 0 | 0              | 1  | 0 | 0             | 0 | 0 | 4   |  |
| 1245 - 1300 | 0              | 3  | 1  | 0       | 0 | 0 | 2              | 4  | 0 | 0             | 0 | 0 | 10  |  |
| 1300 - 1315 | 0              | 1  | 0  | 1       | 0 | 0 | 0              | 1  | 0 | 0             | 0 | 0 | 3   |  |
| 1315 - 1330 | 0              | 2  | 1  | 1       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 6   |  |
| 1330 - 1345 | 0              | 2  | 0  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 4   |  |
| 1345 - 1400 | 0              | 0  | 1  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 3   |  |
| 1400 - 1415 | 0              | 2  | 2  | 2       | 0 | 0 | 0              | 1  | 0 | 0             | 0 | 0 | 7   |  |
| 1415 - 1430 | 0              | 2  | 0  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 4   |  |
| 1430 - 1445 | 0              | 1  | 0  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 3   |  |
| 1445 - 1500 | 0              | 2  | 1  | 0       | 0 | 0 | 0              | 2  | 0 | 0             | 0 | 0 | 5   |  |
| Period End  | 0              | 30 | 13 | 12      | 0 | 1 | 3              | 35 | 0 | 0             | 0 | 0 | 94  |  |

| Heavies     | NORTH          |   |   | WEST    |   |   | SOUTH          |   |   | EAST          |   |   | TOT |  |
|-------------|----------------|---|---|---------|---|---|----------------|---|---|---------------|---|---|-----|--|
|             | Coronation Pde |   |   | Dean St |   |   | Coronation Pde |   |   | Tangarra St E |   |   |     |  |
|             | L              | I | R | L       | I | R | L              | I | R | L             | I | R |     |  |
| Peak Period |                |   |   |         |   |   |                |   |   |               |   |   |     |  |
| 1000 - 1100 | 0              | 6 | 3 | 3       | 3 | 0 | 0              | 0 | 0 | 6             | 0 | 0 | 18  |  |
| 1015 - 1115 | 0              | 4 | 2 | 1       | 0 | 0 | 0              | 0 | 0 | 5             | 0 | 0 | 12  |  |
| 1030 - 1130 | 0              | 3 | 2 | 1       | 0 | 0 | 0              | 0 | 0 | 2             | 0 | 0 | 8   |  |
| 1045 - 1145 | 0              | 2 | 1 | 0       | 0 | 0 | 0              | 0 | 0 | 2             | 0 | 0 | 5   |  |
| 1100 - 1200 | 0              | 5 | 3 | 3       | 0 | 1 | 1              | 7 | 0 | 0             | 0 | 0 | 20  |  |
| 1115 - 1215 | 0              | 3 | 2 | 3       | 0 | 1 | 0              | 4 | 0 | 0             | 0 | 0 | 13  |  |
| 1130 - 1230 | 0              | 4 | 3 | 3       | 0 | 0 | 0              | 0 | 0 | 6             | 0 | 0 | 16  |  |
| 1145 - 1245 | 0              | 5 | 3 | 2       | 0 | 0 | 0              | 0 | 0 | 6             | 0 | 0 | 16  |  |
| 1200 - 1300 | 0              | 7 | 2 | 2       | 0 | 0 | 2              | 8 | 0 | 0             | 0 | 0 | 21  |  |
| 1215 - 1315 | 0              | 8 | 2 | 2       | 0 | 0 | 0              | 2 | 9 | 0             | 0 | 0 | 23  |  |
| 1230 - 1330 | 0              | 8 | 2 | 3       | 0 | 0 | 2              | 8 | 0 | 0             | 0 | 0 | 23  |  |
| 1245 - 1345 | 0              | 8 | 2 | 2       | 0 | 0 | 0              | 2 | 9 | 0             | 0 | 0 | 23  |  |
| 1300 - 1400 | 0              | 5 | 2 | 2       | 0 | 0 | 0              | 0 | 0 | 7             | 0 | 0 | 16  |  |
| 1315 - 1415 | 0              | 6 | 4 | 3       | 0 | 0 | 0              | 0 | 7 | 0             | 0 | 0 | 20  |  |
| 1330 - 1430 | 0              | 6 | 3 | 2       | 0 | 0 | 0              | 0 | 7 | 0             | 0 | 0 | 18  |  |
| 1345 - 1445 | 0              | 5 | 3 | 2       | 0 | 0 | 0              | 0 | 7 | 0             | 0 | 0 | 17  |  |
| 1400 - 1500 | 0              | 7 | 3 | 2       | 0 | 0 | 0              | 0 | 7 | 0             | 0 | 0 | 19  |  |
| PEAK HOUR   | 0              | 6 | 4 | 3       | 0 | 0 | 0              | 7 | 0 | 0             | 0 | 0 | 20  |  |



# R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 6182 CROYDON PARK Flower Power

Day/Date : Saturday 13th August 2016

| COMBINED    | NORTH          |      |     | WEST    |     |     | SOUTH          |      |    | EAST          |     |     |      |
|-------------|----------------|------|-----|---------|-----|-----|----------------|------|----|---------------|-----|-----|------|
|             | Coronation Pde |      |     | Dean St |     |     | Coronation Pde |      |    | Tangarra St E |     |     |      |
| Time Period | L              | T    | R   | L       | T   | R   | L              | T    | R  | L             | T   | R   | TOT  |
| 1000 - 1015 | 6              | 135  | 13  | 25      | 6   | 8   | 3              | 153  | 0  | 3             | 10  | 11  | 373  |
| 1015 - 1030 | 14             | 159  | 10  | 14      | 10  | 13  | 8              | 204  | 2  | 5             | 8   | 14  | 461  |
| 1030 - 1045 | 3              | 139  | 9   | 21      | 10  | 15  | 14             | 159  | 3  | 3             | 4   | 10  | 390  |
| 1045 - 1100 | 7              | 144  | 9   | 19      | 17  | 14  | 7              | 140  | 2  | 2             | 9   | 14  | 384  |
| 1100 - 1115 | 7              | 163  | 11  | 23      | 15  | 16  | 10             | 185  | 1  | 8             | 12  | 14  | 465  |
| 1115 - 1130 | 7              | 151  | 11  | 28      | 11  | 17  | 8              | 172  | 2  | 7             | 11  | 15  | 440  |
| 1130 - 1145 | 7              | 145  | 9   | 31      | 17  | 16  | 6              | 157  | 2  | 2             | 11  | 14  | 417  |
| 1145 - 1200 | 16             | 163  | 11  | 20      | 14  | 23  | 5              | 173  | 1  | 1             | 10  | 11  | 448  |
| 1200 - 1215 | 6              | 175  | 6   | 26      | 10  | 21  | 10             | 169  | 0  | 7             | 5   | 14  | 449  |
| 1215 - 1230 | 7              | 176  | 12  | 14      | 13  | 17  | 5              | 187  | 2  | 9             | 8   | 17  | 467  |
| 1230 - 1245 | 9              | 169  | 10  | 18      | 9   | 18  | 14             | 179  | 2  | 6             | 8   | 9   | 451  |
| 1245 - 1300 | 7              | 163  | 8   | 26      | 12  | 16  | 7              | 168  | 1  | 6             | 12  | 18  | 444  |
| 1300 - 1315 | 9              | 204  | 10  | 27      | 14  | 16  | 11             | 174  | 2  | 2             | 8   | 9   | 486  |
| 1315 - 1330 | 6              | 157  | 10  | 25      | 14  | 15  | 9              | 183  | 0  | 4             | 4   | 8   | 435  |
| 1330 - 1345 | 9              | 207  | 8   | 24      | 9   | 16  | 11             | 203  | 2  | 6             | 9   | 12  | 516  |
| 1345 - 1400 | 6              | 148  | 5   | 20      | 6   | 18  | 10             | 154  | 0  | 6             | 8   | 7   | 388  |
| 1400 - 1415 | 9              | 229  | 14  | 20      | 22  | 20  | 19             | 176  | 2  | 6             | 18  | 15  | 550  |
| 1415 - 1430 | 7              | 133  | 11  | 11      | 11  | 12  | 9              | 114  | 2  | 2             | 6   | 6   | 324  |
| 1430 - 1445 | 3              | 174  | 12  | 21      | 11  | 10  | 7              | 167  | 3  | 5             | 9   | 11  | 433  |
| 1445 - 1500 | 8              | 194  | 10  | 23      | 9   | 18  | 15             | 216  | 1  | 3             | 14  | 7   | 518  |
| Period End  | 153            | 3328 | 199 | 436     | 240 | 319 | 188            | 3433 | 30 | 93            | 184 | 236 | 8839 |

| COMBINED    | NORTH          |     |    | WEST    |    |    | SOUTH          |     |   | EAST          |    |    |      |
|-------------|----------------|-----|----|---------|----|----|----------------|-----|---|---------------|----|----|------|
|             | Coronation Pde |     |    | Dean St |    |    | Coronation Pde |     |   | Tangarra St E |    |    |      |
| Peak Period | L              | T   | R  | L       | T  | R  | L              | T   | R | L             | T  | R  | TOT  |
| 1000 - 1100 | 6              | 135 | 13 | 25      | 6  | 8  | 3              | 153 | 0 | 3             | 10 | 11 | 373  |
| 1015 - 1115 | 31             | 605 | 39 | 77      | 52 | 58 | 39             | 688 | 8 | 18            | 33 | 52 | 1700 |
| 1030 - 1130 | 24             | 597 | 40 | 91      | 53 | 62 | 39             | 656 | 8 | 20            | 36 | 53 | 1679 |
| 1045 - 1145 | 28             | 603 | 40 | 101     | 60 | 63 | 31             | 654 | 7 | 19            | 43 | 57 | 1706 |
| 1100 - 1200 | 37             | 622 | 42 | 102     | 57 | 72 | 29             | 687 | 6 | 18            | 44 | 54 | 1770 |
| 1115 - 1215 | 36             | 634 | 37 | 105     | 52 | 77 | 29             | 671 | 5 | 17            | 37 | 54 | 1754 |
| 1130 - 1230 | 36             | 659 | 38 | 91      | 54 | 77 | 26             | 686 | 5 | 19            | 34 | 56 | 1781 |
| 1145 - 1245 | 38             | 683 | 39 | 78      | 46 | 79 | 34             | 708 | 5 | 23            | 31 | 51 | 1815 |
| 1200 - 1300 | 29             | 683 | 36 | 84      | 44 | 72 | 36             | 703 | 5 | 28            | 33 | 58 | 1811 |
| 1215 - 1315 | 32             | 712 | 40 | 85      | 48 | 67 | 37             | 708 | 7 | 23            | 36 | 53 | 1848 |
| 1230 - 1330 | 31             | 693 | 38 | 96      | 49 | 65 | 41             | 704 | 5 | 18            | 32 | 44 | 1816 |
| 1245 - 1345 | 31             | 731 | 36 | 102     | 49 | 63 | 38             | 728 | 5 | 18            | 33 | 47 | 1881 |
| 1300 - 1400 | 30             | 716 | 33 | 96      | 43 | 65 | 41             | 714 | 4 | 18            | 29 | 36 | 1825 |
| 1315 - 1415 | 30             | 741 | 37 | 89      | 51 | 69 | 49             | 716 | 4 | 22            | 39 | 42 | 1889 |
| 1330 - 1430 | 31             | 717 | 38 | 75      | 48 | 66 | 49             | 647 | 6 | 20            | 41 | 40 | 1778 |
| 1345 - 1445 | 25             | 684 | 42 | 72      | 50 | 60 | 45             | 611 | 7 | 19            | 41 | 39 | 1695 |
| 1400 - 1500 | 27             | 730 | 47 | 75      | 53 | 60 | 50             | 673 | 8 | 16            | 47 | 39 | 1825 |
| PEAK HOUR   | 30             | 741 | 37 | 89      | 51 | 69 | 49             | 716 | 4 | 22            | 39 | 42 | 1889 |



## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

|             |                |              |                |               | Client : Varga Traffic Planning              |
|-------------|----------------|--------------|----------------|---------------|--|
|             |                |              |                |               | Job No/Name : 6182 CROYDON PARK Flower Power |
|             |                |              |                |               | Day/Date : Saturday 13th August 2016         |
| Peds        | NORTH          | WEST         | SOUTH          | EAST          |  |
|             | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E |  |
| Time Period | Unclassified   | Unclassified | Unclassified   | Unclassified  | TOT  |
| 1000 - 1015 | 0              | 0            | 1              | 0             | 1  |
| 1015 - 1030 | 0              | 0            | 0              | 0             | 0  |
| 1030 - 1045 | 0              | 0            | 7              | 0             | 7  |
| 1045 - 1100 | 1              | 0            | 10             | 3             | 14   |
| 1100 - 1115 | 0              | 0            | 3              | 0             | 3  |
| 1115 - 1130 | 0              | 0            | 2              | 0             | 2  |
| 1130 - 1145 | 0              | 0            | 2              | 2             | 4  |
| 1145 - 1200 | 0              | 0            | 2              | 0             | 2  |
| 1200 - 1215 | 0              | 0            | 4              | 1             | 5  |
| 1215 - 1230 | 0              | 0            | 4              | 0             | 4  |
| 1230 - 1245 | 0              | 0            | 2              | 0             | 2  |
| 1245 - 1300 | 0              | 0            | 5              | 1             | 6  |
| 1300 - 1315 | 0              | 0            | 6              | 4             | 10   |
| 1315 - 1330 | 0              | 0            | 3              | 1             | 4  |
| 1330 - 1345 | 1              | 0            | 4              | 0             | 5  |
| 1345 - 1400 | 0              | 0            | 2              | 3             | 5  |
| 1400 - 1415 | 0              | 0            | 1              | 0             | 1  |
| 1415 - 1430 | 0              | 0            | 2              | 0             | 2  |
| 1430 - 1445 | 0              | 0            | 2              | 0             | 2  |
| 1445 - 1500 | 0              | 0            | 3              | 0             | 3  |
| Period End  | 2              | 0            | 65             | 15            | 82   |

| Peds        | NORTH          | WEST         | SOUTH          | EAST          |     |
|-------------|----------------|--------------|----------------|---------------|-----|
|             | Coronation Pde | Dean St      | Coronation Pde | Tangarra St E |     |
| Peak Period | Unclassified   | Unclassified | Unclassified   | Unclassified  | TOT |
| 1000 - 1100 | 1              | 0            | 18             | 3             | 22  |
| 1015 - 1115 | 1              | 0            | 17             | 3             | 21  |
| 1030 - 1130 | 1              | 0            | 17             | 3             | 21  |
| 1045 - 1145 | 1              | 0            | 10             | 3             | 14  |
| 1100 - 1200 | 0              | 0            | 9              | 2             | 11  |
| 1115 - 1215 | 0              | 0            | 10             | 3             | 13  |
| 1130 - 1230 | 0              | 0            | 12             | 3             | 15  |
| 1145 - 1245 | 0              | 0            | 12             | 1             | 13  |
| 1200 - 1300 | 0              | 0            | 15             | 2             | 17  |
| 1215 - 1315 | 0              | 0            | 17             | 5             | 22  |
| 1230 - 1330 | 0              | 0            | 16             | 6             | 22  |
| 1245 - 1345 | 1              | 0            | 18             | 6             | 25  |
| 1300 - 1400 | 1              | 0            | 15             | 8             | 24  |
| 1315 - 1415 | 1              | 0            | 10             | 4             | 15  |
| 1330 - 1430 | 1              | 0            | 9              | 3             | 13  |
| 1345 - 1445 | 0              | 0            | 7              | 3             | 10  |
| 1400 - 1500 | 0              | 0            | 8              | 0             | 8   |
| PEAK HOUR   | 1              | 0            | 10             | 4             | 15  |







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016

**PM PEAK**  
**1700 - 1800**

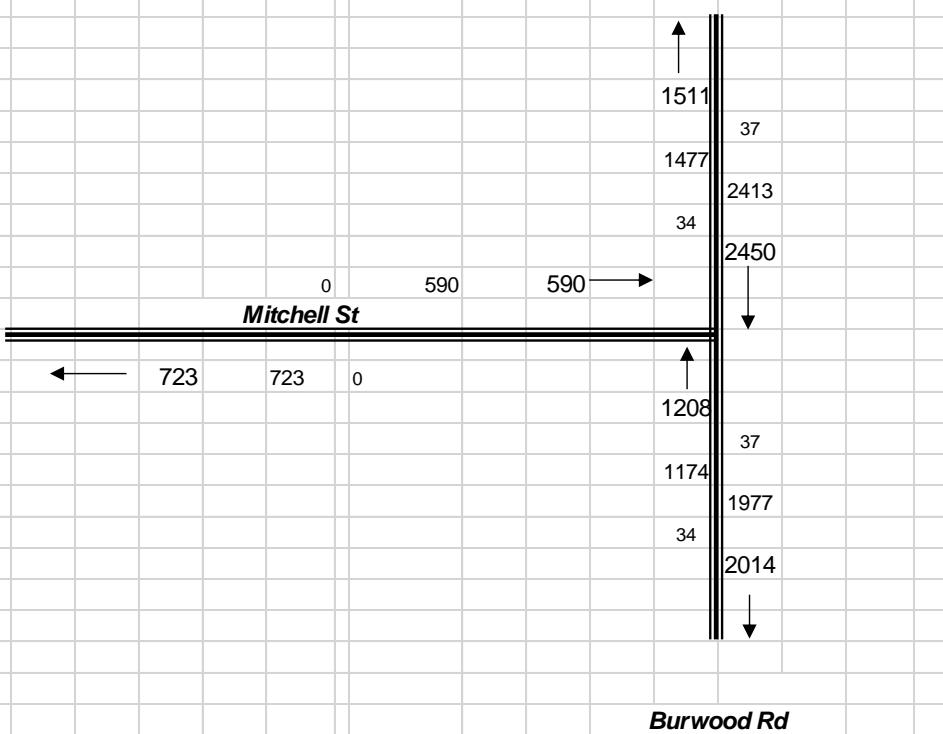
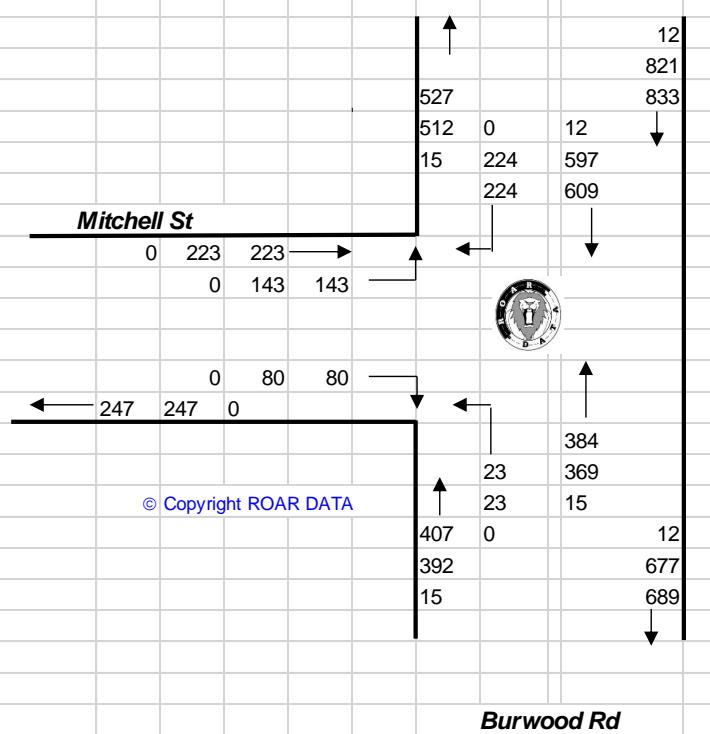
|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

**TOTAL VOLUMES  
FOR COUNT  
PERIOD**



**Burwood Rd**

**Burwood Rd**





**R.O.A.R. DATA**

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 6182 CROYDON PARK Flower Power

Day/Date : Friday 12th August 2016



*Burwood Rd*

**Intersection Details**

Obtained via satellite

May be incorrect

**AM PEAK HOUR**  
0745 - 0845

*Mitchell St*

274      143      L  
AM      PM

85      80      R

PM      23      384  
AM      49      561

L      T

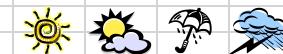
|     |     |
|-----|-----|
| R   | T   |
| 116 | 402 |
| 224 | 609 |

AM

**PM PEAK HOUR**  
1700 - 1800

**Combined figures only**

**Weather >>**



*Burwood Rd*





## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

| Peds        | NORTH        | WEST         | SOUTH        |     |
|-------------|--------------|--------------|--------------|-----|
|             | Burwood Rd   | Mitchell St  | Burwood Rd   |     |
| Time Period | UnClassified | UnClassified | UnClassified | TOT |
| 1000 - 1015 | 7            | 4            | 0            | 11  |
| 1015 - 1030 | 5            | 2            | 0            | 7   |
| 1030 - 1045 | 6            | 0            | 0            | 6   |
| 1045 - 1100 | 3            | 1            | 0            | 4   |
| 1100 - 1115 | 8            | 2            | 0            | 10  |
| 1115 - 1130 | 5            | 6            | 0            | 11  |
| 1130 - 1145 | 3            | 0            | 0            | 3   |
| 1145 - 1200 | 2            | 5            | 0            | 7   |
| 1200 - 1215 | 4            | 0            | 0            | 4   |
| 1215 - 1230 | 5            | 2            | 0            | 7   |
| 1230 - 1245 | 7            | 1            | 0            | 8   |
| 1245 - 1300 | 5            | 2            | 0            | 7   |
| 1300 - 1315 | 9            | 3            | 0            | 12  |
| 1315 - 1330 | 4            | 3            | 0            | 7   |
| 1330 - 1345 | 3            | 4            | 0            | 7   |
| 1345 - 1400 | 0            | 1            | 0            | 1   |
| 1400 - 1415 | 4            | 0            | 2            | 6   |
| 1415 - 1430 | 7            | 1            | 0            | 8   |
| 1430 - 1445 | 5            | 0            | 0            | 5   |
| 1445 - 1500 | 3            | 0            | 2            | 5   |
| Period End  | 95           | 37           | 4            | 136 |

|             |                                  |
|-------------|----------------------------------|
| Client      | : Varga Traffic Planning         |
| Job No/Name | : 6182 CROYDON PARK Flower Power |
| Day/Date    | : Saturday 13th August 2016      |

| Peds        | NORTH        | WEST         | SOUTH        |     |
|-------------|--------------|--------------|--------------|-----|
|             | Burwood Rd   | Mitchell St  | Burwood Rd   |     |
| Peak Period | UnClassified | UnClassified | UnClassified | TOT |
| 1000 - 1100 | 21           | 7            | 0            | 28  |
| 1015 - 1115 | 22           | 5            | 0            | 27  |
| 1030 - 1130 | 43           | 17           | 0            | 60  |
| 1045 - 1145 | 42           | 19           | 0            | 61  |
| 1100 - 1200 | 48           | 21           | 0            | 69  |
| 1115 - 1215 | 44           | 22           | 0            | 66  |
| 1130 - 1230 | 42           | 20           | 0            | 62  |
| 1145 - 1245 | 39           | 21           | 0            | 60  |
| 1200 - 1300 | 37           | 16           | 0            | 53  |
| 1215 - 1315 | 37           | 16           | 2            | 55  |
| 1230 - 1330 | 25           | 9            | 0            | 34  |
| 1245 - 1345 | 21           | 12           | 0            | 33  |
| 1300 - 1400 | 16           | 11           | 0            | 27  |
| 1315 - 1415 | 7            | 8            | 0            | 15  |
| 1330 - 1430 | 7            | 5            | 2            | 14  |
| 1345 - 1445 | 11           | 2            | 2            | 15  |
| 1400 - 1500 | 19           | 1            | 4            | 24  |
| PEAK HOUR   | 19           | 1            | 4            | 24  |







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

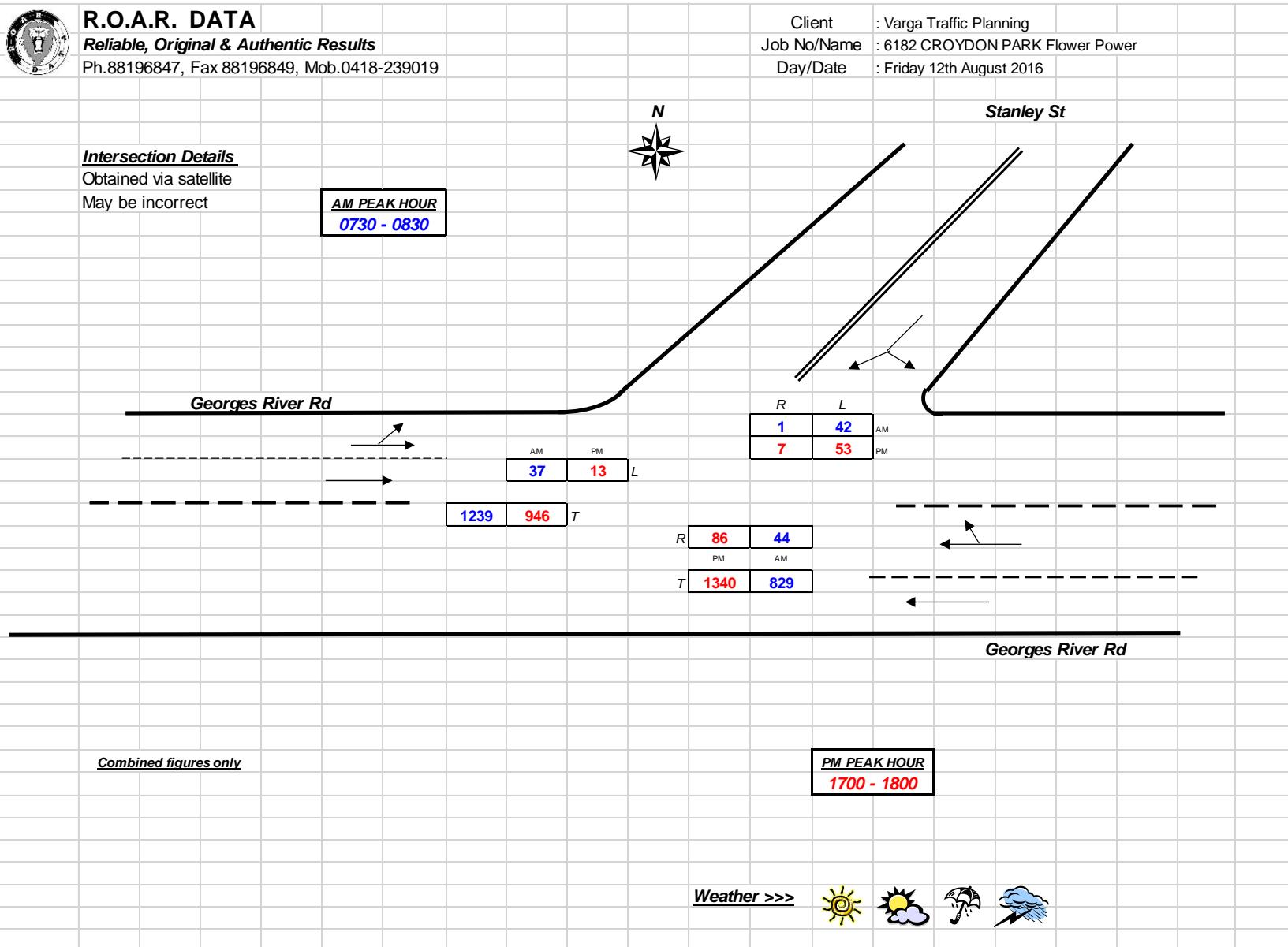
Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016

### Intersection Details

Obtained via satellite

May be incorrect

AM PEAK HOUR  
**0730 - 0830**







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

| Peds        | WEST<br>Georges | NORTH<br>Stanley St | EAST<br>Georges | TOT |
|-------------|-----------------|---------------------|-----------------|-----|
| Time Period | UnClassified    | UnClassified        | UnClassified    |     |
| 1000 - 1015 | 0               | 0                   | 0               | 0   |
| 1015 - 1030 | 0               | 2                   | 0               | 2   |
| 1030 - 1045 | 0               | 1                   | 0               | 1   |
| 1045 - 1100 | 0               | 0                   | 0               | 0   |
| 1100 - 1115 | 0               | 0                   | 0               | 0   |
| 1115 - 1130 | 0               | 0                   | 0               | 0   |
| 1130 - 1145 | 0               | 0                   | 0               | 0   |
| 1145 - 1200 | 1               | 0                   | 0               | 1   |
| 1200 - 1215 | 0               | 0                   | 0               | 0   |
| 1215 - 1230 | 0               | 0                   | 0               | 0   |
| 1230 - 1245 | 1               | 0                   | 0               | 1   |
| 1245 - 1300 | 0               | 0                   | 0               | 0   |
| 1300 - 1315 | 0               | 1                   | 1               | 2   |
| 1315 - 1330 | 0               | 0                   | 0               | 0   |
| 1330 - 1345 | 0               | 0                   | 0               | 0   |
| 1345 - 1400 | 0               | 0                   | 0               | 0   |
| 1400 - 1415 | 0               | 1                   | 2               | 3   |
| 1415 - 1430 | 0               | 0                   | 0               | 0   |
| 1430 - 1445 | 0               | 0                   | 0               | 0   |
| 1445 - 1500 | 0               | 0                   | 0               | 0   |
| Period End  | 2               | 5                   | 3               | 10  |

Client : Varga Traffic Planning  
 Job No/Name : 6182 CROYDON PARK Flower Power  
 Day/Date : Saturday 13th August 2016

| Peds        | WEST<br>Georges | NORTH<br>Stanley St | EAST<br>Georges | TOT |
|-------------|-----------------|---------------------|-----------------|-----|
| Peak Period | UnClassified    | UnClassified        | UnClassified    | TOT |
| 1000 - 1100 | 0               | 3                   | 0               | 3   |
| 1015 - 1115 | 0               | 3                   | 0               | 3   |
| 1030 - 1130 | 2               | 1                   | 0               | 3   |
| 1045 - 1145 | 2               | 0                   | 0               | 2   |
| 1100 - 1200 | 2               | 1                   | 1               | 4   |
| 1115 - 1215 | 2               | 1                   | 1               | 4   |
| 1130 - 1230 | 2               | 1                   | 1               | 4   |
| 1145 - 1245 | 2               | 1                   | 1               | 4   |
| 1200 - 1300 | 1               | 1                   | 1               | 3   |
| 1215 - 1315 | 1               | 2                   | 3               | 6   |
| 1230 - 1330 | 1               | 1                   | 1               | 3   |
| 1245 - 1345 | 0               | 1                   | 1               | 2   |
| 1300 - 1400 | 0               | 1                   | 1               | 2   |
| 1315 - 1415 | 0               | 0                   | 0               | 0   |
| 1330 - 1430 | 0               | 1                   | 2               | 3   |
| 1345 - 1445 | 0               | 1                   | 2               | 3   |
| 1400 - 1500 | 0               | 1                   | 2               | 3   |

|           |   |   |   |   |
|-----------|---|---|---|---|
| PEAK HOUR | 2 | 1 | 1 | 4 |
|-----------|---|---|---|---|







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016



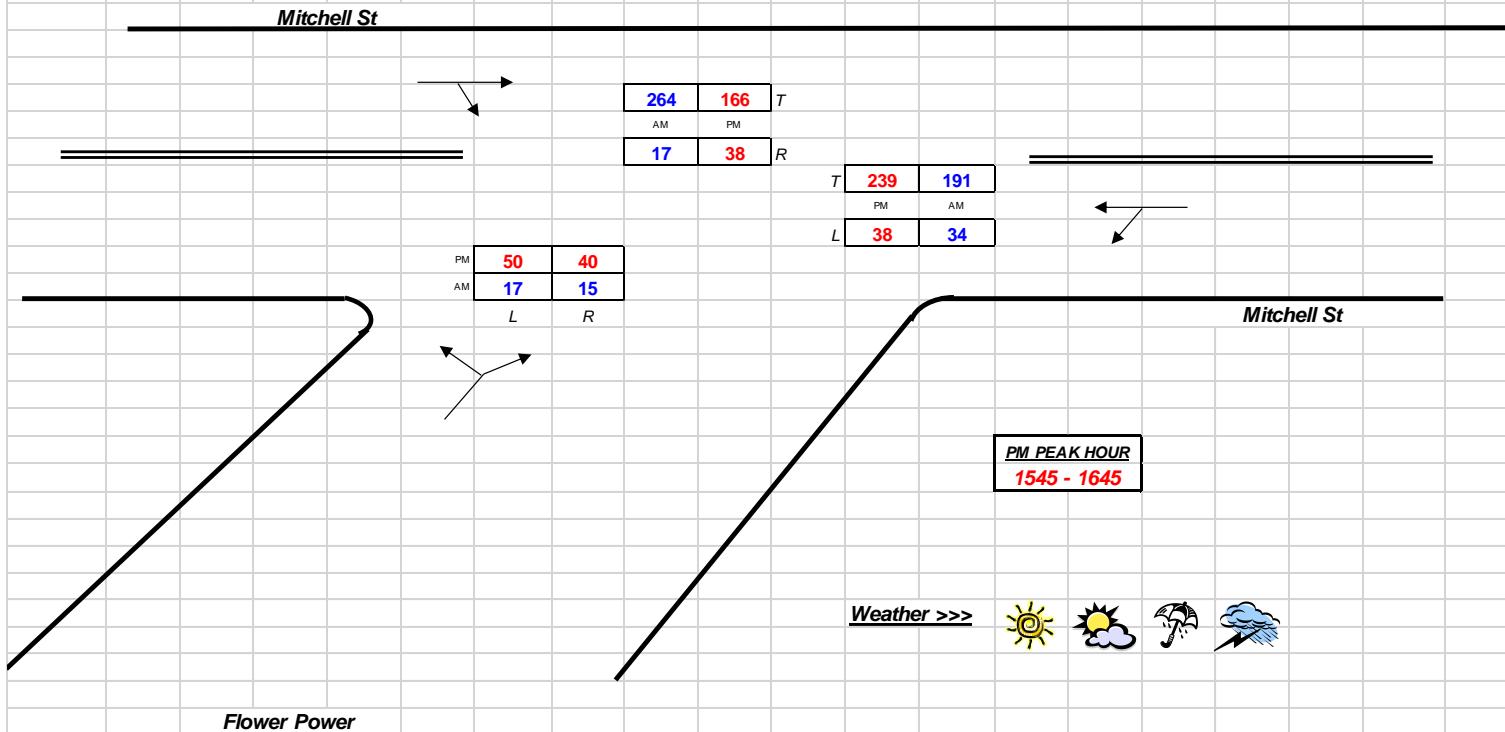
### Intersection Details

Obtained via satellite

May be incorrect

**AM PEAK HOUR**  
**0815 - 0915**

*Combined figures only*







# R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
 Job No/Name : 6182 CROYDON PARK Flower Power  
 Day/Date : Saturday 13th August 2016

| Peds              | WEST              | SOUTH         | EAST               |            |
|-------------------|-------------------|---------------|--------------------|------------|
|                   | <i>Michell St</i> | <i>Flower</i> | <i>Mitchell St</i> |            |
| Time Period       | UnClassified      | UnClassified  | UnClassified       | TOT        |
| 1000 - 1015       | 10                | 0             | 1                  | 11         |
| 1015 - 1030       | 6                 | 5             | 1                  | 12         |
| 1030 - 1045       | 4                 | 3             | 4                  | 11         |
| 1045 - 1100       | 4                 | 0             | 0                  | 4          |
| 1100 - 1115       | 4                 | 2             | 2                  | 8          |
| 1115 - 1130       | 7                 | 3             | 2                  | 12         |
| 1130 - 1145       | 7                 | 0             | 0                  | 7          |
| 1145 - 1200       | 4                 | 0             | 3                  | 7          |
| 1200 - 1215       | 6                 | 7             | 6                  | 19         |
| 1215 - 1230       | 1                 | 4             | 0                  | 5          |
| 1230 - 1245       | 5                 | 2             | 0                  | 7          |
| 1245 - 1300       | 4                 | 0             | 0                  | 4          |
| 1300 - 1315       | 1                 | 1             | 3                  | 5          |
| 1315 - 1330       | 1                 | 5             | 0                  | 6          |
| 1330 - 1345       | 2                 | 1             | 1                  | 4          |
| 1345 - 1400       | 1                 | 1             | 2                  | 4          |
| 1400 - 1415       | 0                 | 4             | 2                  | 6          |
| 1415 - 1430       | 4                 | 0             | 0                  | 4          |
| 1430 - 1445       | 0                 | 1             | 1                  | 2          |
| 1445 - 1500       | 1                 | 0             | 0                  | 1          |
| <b>Period End</b> | <b>72</b>         | <b>39</b>     | <b>28</b>          | <b>139</b> |

| Peds               | WEST              | SOUTH         | EAST               |           |
|--------------------|-------------------|---------------|--------------------|-----------|
|                    | <i>Michell St</i> | <i>Flower</i> | <i>Mitchell St</i> |           |
| Peak Period        | UnClassified      | UnClassified  | UnClassified       | TOT       |
| 1000 - 1100        | 24                | 8             | 6                  | 38        |
| 1015 - 1115        | 18                | 10            | 7                  | 35        |
| 1030 - 1130        | 42                | 21            | 17                 | 80        |
| 1045 - 1145        | 42                | 18            | 13                 | 73        |
| 1100 - 1200        | 39                | 19            | 16                 | 74        |
| 1115 - 1215        | 36                | 22            | 14                 | 72        |
| 1130 - 1230        | 31                | 20            | 13                 | 64        |
| 1145 - 1245        | 25                | 21            | 15                 | 61        |
| <b>1200 - 1300</b> | <b>21</b>         | <b>21</b>     | <b>12</b>          | <b>54</b> |
| 1215 - 1315        | 15                | 18            | 8                  | 41        |
| 1230 - 1330        | 11                | 8             | 3                  | 22        |
| 1245 - 1345        | 8                 | 7             | 4                  | 19        |
| 1300 - 1400        | 5                 | 8             | 6                  | 19        |
| 1315 - 1415        | 4                 | 7             | 3                  | 14        |
| 1330 - 1430        | 3                 | 6             | 5                  | 14        |
| 1345 - 1445        | 5                 | 5             | 4                  | 14        |
| 1400 - 1500        | 5                 | 5             | 3                  | 13        |

|           |    |    |    |    |
|-----------|----|----|----|----|
| PEAK HOUR | 21 | 21 | 12 | 54 |
|-----------|----|----|----|----|







## R.O.A.R. DATA

*Reliable, Original & Authentic Results*

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning  
Job No/Name : 6182 CROYDON PARK Flower Power  
Day/Date : Friday 12th August 2016

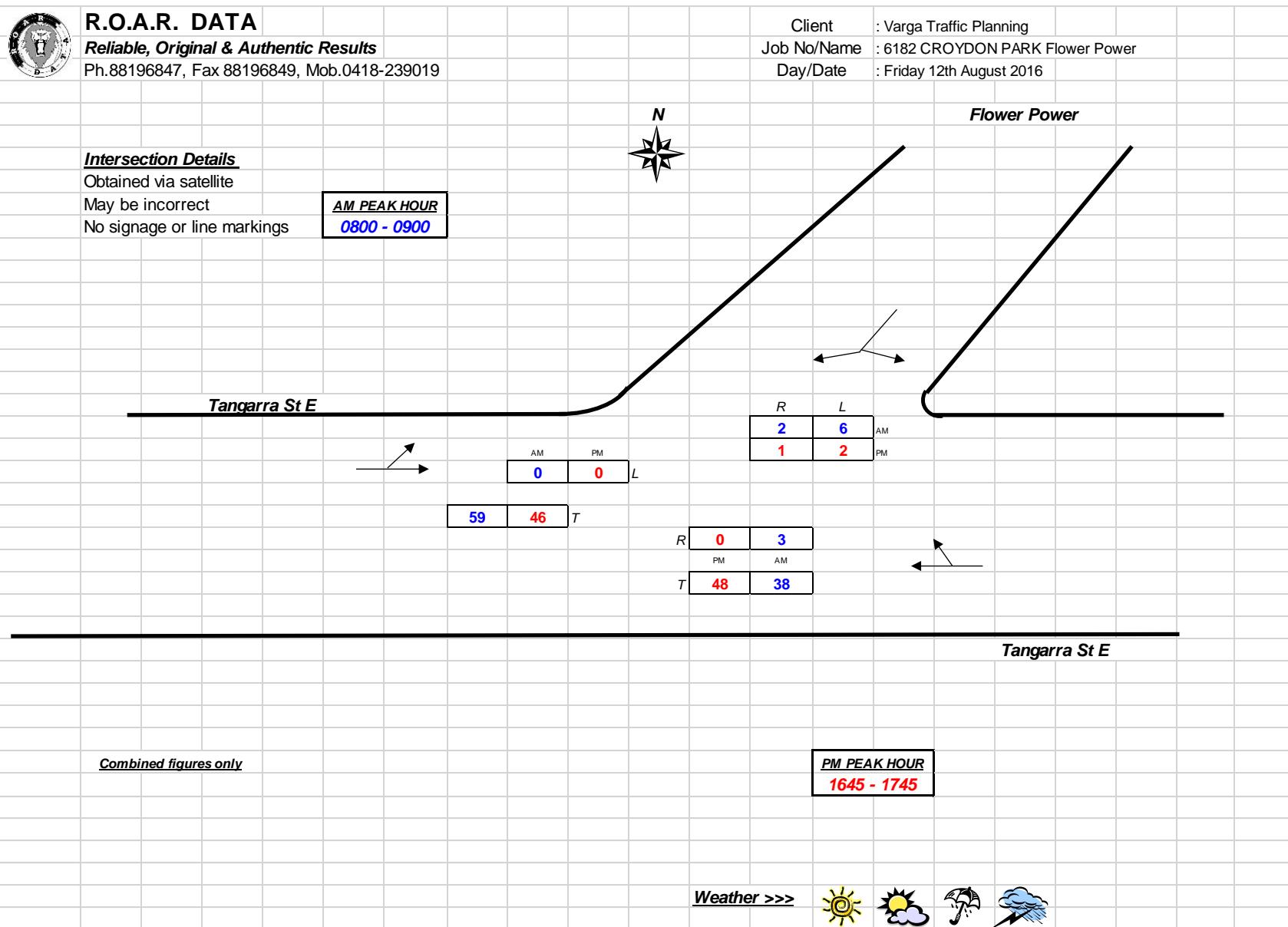
### Intersection Details

Obtained via satellite

May be incorrect

No signage or line markings

**AM PEAK HOUR**  
**0800 - 0900**







## R.O.A.R. DATA

**Reliable, Original & Authentic Results**

Ph.88196847, Fax 88196849, Mob.0418-239019

| Peds              | WEST         | NORTH        | EAST         |           |
|-------------------|--------------|--------------|--------------|-----------|
|                   | Tangarra Rd  | Flower       | Tangarra Rd  |           |
| Time Period       | UnClassified | UnClassified | UnClassified | TOT       |
| 1000 - 1015       | 1            | 0            | 0            | 1         |
| 1015 - 1030       | 0            | 0            | 2            | 2         |
| 1030 - 1045       | 1            | 0            | 1            | 2         |
| 1045 - 1100       | 0            | 0            | 0            | 0         |
| 1100 - 1115       | 3            | 0            | 0            | 3         |
| 1115 - 1130       | 2            | 0            | 1            | 3         |
| 1130 - 1145       | 1            | 0            | 1            | 2         |
| 1145 - 1200       | 1            | 4            | 1            | 6         |
| 1200 - 1215       | 0            | 1            | 0            | 1         |
| 1215 - 1230       | 0            | 2            | 2            | 4         |
| 1230 - 1245       | 2            | 0            | 0            | 2         |
| 1245 - 1300       | 1            | 0            | 3            | 4         |
| 1300 - 1315       | 2            | 1            | 2            | 5         |
| 1315 - 1330       | 0            | 0            | 1            | 1         |
| 1330 - 1345       | 0            | 1            | 0            | 1         |
| 1345 - 1400       | 2            | 0            | 0            | 2         |
| 1400 - 1415       | 0            | 1            | 0            | 1         |
| 1415 - 1430       | 0            | 0            | 1            | 1         |
| 1430 - 1445       | 0            | 1            | 2            | 3         |
| 1445 - 1500       | 0            | 0            | 0            | 0         |
| <b>Period End</b> | <b>16</b>    | <b>11</b>    | <b>17</b>    | <b>44</b> |

Client : Varga Traffic Planning

Job No/Name : 6182 CROYDON PARK Flower Power

Day/Date : Saturday 13th August 2016

| Peds               | WEST         | NORTH        | EAST         |           |
|--------------------|--------------|--------------|--------------|-----------|
|                    | Tangarra Rd  | Flower       | Tangarra Rd  |           |
| Peak Period        | UnClassified | UnClassified | UnClassified | TOT       |
| 1000 - 1100        | 2            | 0            | 3            | 5         |
| 1015 - 1115        | 4            | 0            | 3            | 7         |
| 1030 - 1130        | 10           | 7            | 6            | 23        |
| 1045 - 1145        | 10           | 7            | 8            | 25        |
| 1100 - 1200        | 12           | 8            | 10           | 30        |
| <b>1115 - 1215</b> | <b>9</b>     | <b>8</b>     | <b>11</b>    | <b>28</b> |
| 1130 - 1230        | 7            | 9            | 10           | 26        |
| 1145 - 1245        | 8            | 9            | 9            | 26        |
| 1200 - 1300        | 7            | 5            | 8            | 20        |
| 1215 - 1315        | 7            | 5            | 8            | 20        |
| 1230 - 1330        | 5            | 1            | 6            | 12        |
| 1245 - 1345        | 3            | 2            | 6            | 11        |
| 1300 - 1400        | 4            | 2            | 3            | 9         |
| 1315 - 1415        | 2            | 1            | 1            | 4         |
| 1330 - 1430        | 2            | 2            | 0            | 4         |
| 1345 - 1445        | 2            | 1            | 1            | 4         |
| 1400 - 1500        | 0            | 2            | 3            | 5         |

| PEAK HOUR | 9 | 8 | 11 | 28 |
|-----------|---|---|----|----|
|           |   |   |    |    |

## **APPENDIX C**

### **SIDRA MOVEMENT SUMMARIES**

## MOVEMENT SUMMARY

### ▼ Site: Existing AM

Coronation Pade & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh |
| South: Coronation Pde (S)       |        |                    |            |               |                   |                  |                                |                  |              |                             |
| 2                               | T1     | 1061               | 2.1        | 0.301         | 0.3               | LOS A            | 0.7                            | 5.0              | 0.06         | 0.02                        |
| 3                               | R2     | 40                 | 0.0        | 0.301         | 9.6               | LOS A            | 0.7                            | 5.0              | 0.14         | 0.05                        |
| Approach                        |        | 1101               | 2.0        | 0.301         | 0.7               | NA               | 0.7                            | 5.0              | 0.07         | 0.02                        |
| East: Mitchell St (E)           |        |                    |            |               |                   |                  |                                |                  |              |                             |
| 4                               | L2     | 28                 | 3.6        | 0.583         | 22.0              | LOS B            | 2.6                            | 18.3             | 0.80         | 0.99                        |
| 6                               | R2     | 59                 | 1.7        | 0.583         | 59.3              | LOS E            | 2.6                            | 18.3             | 0.80         | 0.99                        |
| Approach                        |        | 87                 | 2.3        | 0.583         | 47.3              | LOS D            | 2.6                            | 18.3             | 0.80         | 0.99                        |
| North: Coronation Pde (N)       |        |                    |            |               |                   |                  |                                |                  |              |                             |
| 7                               | L2     | 99                 | 2.0        | 0.166         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.19                        |
| 8                               | T1     | 529                | 3.8        | 0.166         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.08                        |
| Approach                        |        | 628                | 3.5        | 0.166         | 0.9               | NA               | 0.0                            | 0.0              | 0.00         | 0.09                        |
| All Vehicles                    |        | 1816               | 2.5        | 0.583         | 3.0               | NA               | 2.6                            | 18.3             | 0.08         | 0.09                        |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is good LOS measure due to zero delays associated with major road movements.

## MOVEMENT SUMMARY

### ▼ Site: Existing PM

Coronation Pade & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles  |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 2                                | T1     | 758                | 1.5        | 0.218         | 0.6               | LOS A            | 0.6                            | 4.2              | 0.08         | 0.02                        | 58.9               |
| 3                                | R2     | 21                 | 0.0        | 0.218         | 13.8              | LOS A            | 0.6                            | 4.2              | 0.18         | 0.04                        | 55.9               |
| Approach                         |        | 779                | 1.4        | 0.218         | 1.0               | NA               | 0.6                            | 4.2              | 0.08         | 0.02                        | 58.9               |
| <b>East: Mitchell St (E)</b>     |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 44                 | 0.0        | 0.688         | 30.7              | LOS C            | 3.4                            | 24.0             | 0.87         | 1.19                        | 29.7               |
| 6                                | R2     | 62                 | 0.0        | 0.688         | 71.0              | LOS F            | 3.4                            | 24.0             | 0.87         | 1.19                        | 29.6               |
| Approach                         |        | 106                | 0.0        | 0.688         | 54.3              | LOS D            | 3.4                            | 24.0             | 0.87         | 1.19                        | 29.6               |
| <b>North: Coronation Pde (N)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 103                | 0.0        | 0.271         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.12                        | 57.3               |
| 8                                | T1     | 939                | 1.7        | 0.271         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.05                        | 59.5               |
| Approach                         |        | 1042               | 1.5        | 0.271         | 0.6               | NA               | 0.0                            | 0.0              | 0.00         | 0.06                        | 59.2               |
| All Vehicles                     |        | 1927               | 1.4        | 0.688         | 3.7               | NA               | 3.4                            | 24.0             | 0.08         | 0.10                        | 56.0               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 10:01:18 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160816 Existing\COR\_MITX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Existing SAT

Coronation Pade & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Coronation Pde (S)       |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 2                               | T1     | 827                      | 1.2  | 0.234         | 0.4               | LOS A            | 0.5                            | 3.5        | 0.06         | 0.02                        | 59.2               |
| 3                               | R2     | 28                       | 0.0  | 0.234         | 10.3              | LOS A            | 0.5                            | 3.5        | 0.14         | 0.05                        | 56.5               |
| Approach                        |        | 855                      | 1.2  | 0.234         | 0.7               | NA               | 0.5                            | 3.5        | 0.07         | 0.02                        | 59.1               |
| East: Mitchell St (E)           |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 4                               | L2     | 57                       | 0.0  | 0.726         | 26.1              | LOS B            | 4.4                            | 31.0       | 0.80         | 1.18                        | 32.3               |
| 6                               | R2     | 96                       | 0.0  | 0.726         | 55.0              | LOS D            | 4.4                            | 31.0       | 0.80         | 1.18                        | 32.2               |
| Approach                        |        | 153                      | 0.0  | 0.726         | 44.2              | LOS D            | 4.4                            | 31.0       | 0.80         | 1.18                        | 32.3               |
| North: Coronation Pde (N)       |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 7                               | L2     | 84                       | 0.0  | 0.194         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.13                        | 57.2               |
| 8                               | T1     | 664                      | 1.4  | 0.194         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.06                        | 59.4               |
| Approach                        |        | 748                      | 1.2  | 0.194         | 0.6               | NA               | 0.0                            | 0.0        | 0.00         | 0.07                        | 59.2               |
| All Vehicles                    |        | 1756                     | 1.1  | 0.726         | 4.5               | NA               | 4.4                            | 31.0       | 0.10         | 0.14                        | 55.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 10:01:18 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160816 Existing\COR\_MITX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Proposed AM

Coronation Pde & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Coronation Pde (S)       |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 2                               | T1     | 1071               | 2.1        | 0.306         | 0.4               | LOS A            | 0.8                            | 5.4              | 0.07         | 0.02                        | 59.1               |
| 3                               | R2     | 43                 | 0.0        | 0.306         | 9.7               | LOS A            | 0.8                            | 5.4              | 0.15         | 0.05                        | 56.4               |
| Approach                        |        | 1114               | 2.0        | 0.306         | 0.7               | NA               | 0.8                            | 5.4              | 0.07         | 0.03                        | 59.0               |
| East: Mitchell St (E)           |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 40                 | 2.5        | 0.707         | 32.6              | LOS C            | 3.7                            | 26.6             | 0.79         | 1.09                        | 28.9               |
| 6                               | R2     | 69                 | 1.4        | 0.707         | 72.0              | LOS F            | 3.7                            | 26.6             | 0.79         | 1.09                        | 28.8               |
| Approach                        |        | 109                | 1.8        | 0.707         | 57.5              | LOS E            | 3.7                            | 26.6             | 0.79         | 1.09                        | 28.9               |
| North: Coronation Pde (N)       |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 7                               | L2     | 102                | 2.0        | 0.167         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.19                        | 56.6               |
| 8                               | T1     | 531                | 3.8        | 0.167         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.08                        | 59.3               |
| Approach                        |        | 633                | 3.5        | 0.167         | 0.9               | NA               | 0.0                            | 0.0              | 0.00         | 0.10                        | 58.8               |
| All Vehicles                    |        | 1856               | 2.5        | 0.707         | 4.1               | NA               | 3.7                            | 26.6             | 0.09         | 0.11                        | 55.5               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Proposed PM

Coronation Pde & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Coronation Pde (S)       |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 2                               | T1     | 760                      | 1.4  | 0.232         | 1.0               | LOS A            | 0.9                            | 6.7        | 0.11         | 0.03                        | 58.4               |
| 3                               | R2     | 33                       | 0.0  | 0.232         | 14.1              | LOS A            | 0.9                            | 6.7        | 0.28         | 0.07                        | 54.6               |
| Approach                        |        | 793                      | 1.4  | 0.232         | 1.5               | NA               | 0.9                            | 6.7        | 0.12         | 0.03                        | 58.2               |
| East: Mitchell St (E)           |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 4                               | L2     | 47                       | 0.0  | 0.751         | 39.0              | LOS C            | 4.1                            | 28.7       | 0.88         | 1.27                        | 27.6               |
| 6                               | R2     | 65                       | 0.0  | 0.751         | 81.5              | LOS F            | 4.1                            | 28.7       | 0.88         | 1.27                        | 27.5               |
| Approach                        |        | 112                      | 0.0  | 0.751         | 63.7              | LOS E            | 4.1                            | 28.7       | 0.88         | 1.27                        | 27.5               |
| North: Coronation Pde (N)       |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 7                               | L2     | 113                      | 0.0  | 0.276         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.13                        | 57.2               |
| 8                               | T1     | 949                      | 1.7  | 0.276         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.06                        | 59.4               |
| Approach                        |        | 1062                     | 1.5  | 0.276         | 0.6               | NA               | 0.0                            | 0.0        | 0.00         | 0.06                        | 59.2               |
| All Vehicles                    |        | 1967                     | 1.4  | 0.751         | 4.6               | NA               | 4.1                            | 28.7       | 0.10         | 0.12                        | 55.2               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Proposed SAT

Coronation Pde & Mitchell St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Coronation Pde (S)       |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 2                               | T1     | 833                      | 1.2  | 0.242         | 0.5               | LOS A            | 0.7                            | 4.7              | 0.08         | 0.03                        | 59.0               |
| 3                               | R2     | 37                       | 0.0  | 0.242         | 10.4              | LOS A            | 0.7                            | 4.7              | 0.19         | 0.06                        | 56.0               |
| Approach                        |        | 870                      | 1.1  | 0.242         | 0.9               | NA               | 0.7                            | 4.7              | 0.09         | 0.03                        | 58.8               |
| East: Mitchell St (E)           |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 65                       | 0.0  | 0.808         | 36.2              | LOS C            | 5.9                            | 41.1             | 0.81         | 1.33                        | 29.5               |
| 6                               | R2     | 102                      | 0.0  | 0.808         | 67.0              | LOS E            | 5.9                            | 41.1             | 0.81         | 1.33                        | 29.4               |
| Approach                        |        | 167                      | 0.0  | 0.808         | 55.0              | LOS D            | 5.9                            | 41.1             | 0.81         | 1.33                        | 29.5               |
| North: Coronation Pde (N)       |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                               | L2     | 90                       | 0.0  | 0.198         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.14                        | 57.1               |
| 8                               | T1     | 670                      | 1.3  | 0.198         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.06                        | 59.4               |
| Approach                        |        | 760                      | 1.2  | 0.198         | 0.7               | NA               | 0.0                            | 0.0              | 0.00         | 0.07                        | 59.1               |
| All Vehicles                    |        | 1797                     | 1.1  | 0.808         | 5.8               | NA               | 5.9                            | 41.1             | 0.12         | 0.17                        | 53.9               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### Site: Existing AM

Coronation Parade & Tangarra ST/Dean St, Croydon Street

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 56                       | 21.4 | 0.674         | 21.8              | LOS B            | 11.6                           | 97.7             | 0.87         | 0.78                        | 43.1               |
| 2                                | T1     | 866                      | 23.9 | 0.674         | 16.0              | LOS B            | 11.6                           | 97.7             | 0.87         | 0.78                        | 47.3               |
| 3                                | R2     | 8                        | 12.5 | 0.674         | 21.7              | LOS B            | 11.3                           | 95.5             | 0.87         | 0.77                        | 43.5               |
| Approach                         |        | 930                      | 23.7 | 0.674         | 16.4              | LOS B            | 11.6                           | 97.7             | 0.87         | 0.78                        | 47.0               |
| <b>East: Tangarra St (E)</b>     |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 20                       | 30.0 | 0.339         | 34.3              | LOS C            | 1.7                            | 14.0             | 0.97         | 0.73                        | 36.1               |
| 5                                | T1     | 36                       | 19.4 | 0.339         | 29.5              | LOS C            | 1.7                            | 14.0             | 0.97         | 0.73                        | 35.1               |
| 6                                | R2     | 94                       | 27.7 | 0.606         | 36.0              | LOS C            | 2.9                            | 25.5             | 1.00         | 0.83                        | 34.4               |
| Approach                         |        | 150                      | 26.0 | 0.606         | 34.2              | LOS C            | 2.9                            | 25.5             | 0.99         | 0.79                        | 34.8               |
| <b>North: Coronation Pde (N)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 30                       | 33.3 | 0.477         | 19.9              | LOS B            | 7.2                            | 61.4             | 0.77         | 0.68                        | 44.1               |
| 8                                | T1     | 489                      | 25.2 | 0.477         | 15.5              | LOS B            | 7.2                            | 61.4             | 0.80         | 0.69                        | 47.5               |
| 9                                | R2     | 35                       | 20.0 | 0.477         | 23.5              | LOS B            | 5.4                            | 45.8             | 0.84         | 0.72                        | 42.1               |
| Approach                         |        | 554                      | 25.3 | 0.477         | 16.2              | LOS B            | 7.2                            | 61.4             | 0.80         | 0.69                        | 46.9               |
| <b>West: Dean St (W)</b>         |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 119                      | 20.2 | 0.694         | 32.2              | LOS C            | 6.4                            | 52.4             | 0.99         | 0.89                        | 36.6               |
| 11                               | T1     | 94                       | 18.1 | 0.694         | 27.5              | LOS B            | 6.4                            | 52.4             | 0.99         | 0.89                        | 35.5               |
| 12                               | R2     | 129                      | 17.8 | 0.427         | 29.4              | LOS C            | 3.5                            | 28.6             | 0.93         | 0.78                        | 36.9               |
| Approach                         |        | 342                      | 18.7 | 0.694         | 29.9              | LOS C            | 6.4                            | 52.4             | 0.97         | 0.85                        | 36.4               |
| All Vehicles                     |        | 1976                     | 23.4 | 0.694         | 20.0              | LOS B            | 11.6                           | 97.7             | 0.87         | 0.77                        | 43.6               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P2                                 | East Full Crossing  | 1                 | 16.9              | LOS B            | 0.0                                  | 0.0              | 0.75         | 0.75                        |  |
| P3                                 | North Full Crossing | 28                | 18.4              | LOS B            | 0.0                                  | 0.0              | 0.78         | 0.78                        |  |
| All Pedestrians                    |                     | 29                | 18.4              | LOS B            |                                      |                  | 0.78         | 0.78                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 12:37:09 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Existing with Opt Signals\\COR\_TANX.sip6

## MOVEMENT SUMMARY

### Site: Existing PM

Coronation Parade & Tangarra ST/Dean St, Croydon Street  
 Signals - Fixed Time Isolated Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 44                       | 9.1  | 0.448         | 18.1              | LOS B            | 7.0                            | 58.5             | 0.73         | 0.65                        | 45.1               |
| 2                                | T1     | 611                      | 24.2 | 0.448         | 12.8              | LOS A            | 7.0                            | 58.5             | 0.74         | 0.65                        | 49.3               |
| 3                                | R2     | 6                        | 33.3 | 0.448         | 19.1              | LOS B            | 6.7                            | 56.8             | 0.75         | 0.64                        | 44.7               |
| Approach                         |        | 661                      | 23.3 | 0.448         | 13.2              | LOS A            | 7.0                            | 58.5             | 0.74         | 0.65                        | 48.9               |
| <b>East: Tangarra St (E)</b>     |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 19                       | 36.8 | 0.396         | 34.6              | LOS C            | 1.9                            | 16.6             | 0.98         | 0.74                        | 35.9               |
| 5                                | T1     | 63                       | 22.2 | 0.396         | 29.7              | LOS C            | 2.0                            | 16.0             | 0.98         | 0.74                        | 34.9               |
| 6                                | R2     | 48                       | 18.8 | 0.396         | 34.4              | LOS C            | 2.0                            | 16.0             | 0.98         | 0.75                        | 35.5               |
| Approach                         |        | 130                      | 23.1 | 0.396         | 32.2              | LOS C            | 2.0                            | 16.6             | 0.98         | 0.74                        | 35.3               |
| <b>North: Coronation Pde (N)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 34                       | 23.5 | 0.724         | 21.9              | LOS B            | 13.9                           | 118.4            | 0.87         | 0.82                        | 43.2               |
| 8                                | T1     | 893                      | 26.0 | 0.724         | 16.9              | LOS B            | 13.9                           | 118.4            | 0.88         | 0.83                        | 46.7               |
| 9                                | R2     | 55                       | 23.6 | 0.724         | 23.8              | LOS B            | 11.8                           | 100.8            | 0.89         | 0.85                        | 42.0               |
| Approach                         |        | 982                      | 25.8 | 0.724         | 17.5              | LOS B            | 13.9                           | 118.4            | 0.88         | 0.83                        | 46.3               |
| <b>West: Dean St (W)</b>         |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 115                      | 20.0 | 0.731         | 34.8              | LOS C            | 5.8                            | 46.9             | 1.00         | 0.92                        | 35.6               |
| 11                               | T1     | 68                       | 17.6 | 0.731         | 30.0              | LOS C            | 5.8                            | 46.9             | 1.00         | 0.92                        | 34.5               |
| 12                               | R2     | 143                      | 23.8 | 0.600         | 32.7              | LOS C            | 4.3                            | 35.9             | 0.98         | 0.83                        | 35.6               |
| Approach                         |        | 326                      | 21.2 | 0.731         | 32.9              | LOS C            | 5.8                            | 46.9             | 0.99         | 0.88                        | 35.4               |
| All Vehicles                     |        | 2099                     | 24.1 | 0.731         | 19.4              | LOS B            | 13.9                           | 118.4            | 0.86         | 0.77                        | 44.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P2                                 | East Full Crossing  | 1                 | 15.4              | LOS B            | 0.0                                  | 0.0              | 0.72         | 0.72                        |  |
| P3                                 | North Full Crossing | 14                | 20.0              | LOS C            | 0.0                                  | 0.0              | 0.82         | 0.82                        |  |
| All Pedestrians                    |                     | 15                | 19.7              | LOS B            |                                      |                  | 0.81         | 0.81                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 12:36:55 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Existing with Opt Signals\\COR\_TANX.sip6

## MOVEMENT SUMMARY

### Site: Existing SAT

Coronation Parade & Tangarra ST/Dean St, Croydon Street  
 Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 36                 | 5.6        | 0.468         | 18.3              | LOS B            | 7.4                            | 52.7             | 0.77         | 0.67                        | 45.1               |
| 2                                | T1     | 703                | 1.1        | 0.468         | 12.7              | LOS A            | 7.4                            | 52.7             | 0.77         | 0.67                        | 49.5               |
| 3                                | R2     | 5                  | 0.0        | 0.468         | 18.2              | LOS B            | 7.3                            | 51.6             | 0.77         | 0.66                        | 45.5               |
| Approach                         |        | 744                | 1.3        | 0.468         | 13.0              | LOS A            | 7.4                            | 52.7             | 0.77         | 0.67                        | 49.2               |
| <b>East: Tangarra St (E)</b>     |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 28                 | 0.0        | 0.290         | 30.7              | LOS C            | 1.6                            | 11.2             | 0.96         | 0.73                        | 37.7               |
| 5                                | T1     | 33                 | 0.0        | 0.290         | 26.1              | LOS B            | 1.6                            | 11.2             | 0.96         | 0.73                        | 36.1               |
| 6                                | R2     | 58                 | 0.0        | 0.290         | 30.7              | LOS C            | 1.6                            | 11.0             | 0.96         | 0.74                        | 36.7               |
| Approach                         |        | 119                | 0.0        | 0.290         | 29.4              | LOS C            | 1.6                            | 11.2             | 0.96         | 0.73                        | 36.8               |
| <b>North: Coronation Pde (N)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 29                 | 0.0        | 0.506         | 18.5              | LOS B            | 8.3                            | 58.3             | 0.79         | 0.69                        | 45.1               |
| 8                                | T1     | 683                | 1.0        | 0.506         | 13.3              | LOS A            | 8.3                            | 58.3             | 0.79         | 0.69                        | 48.9               |
| 9                                | R2     | 36                 | 5.6        | 0.506         | 19.3              | LOS B            | 7.0                            | 49.9             | 0.80         | 0.70                        | 44.5               |
| Approach                         |        | 748                | 1.2        | 0.506         | 13.8              | LOS A            | 8.3                            | 58.3             | 0.79         | 0.69                        | 48.6               |
| <b>West: Dean St (W)</b>         |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 84                 | 2.4        | 0.471         | 29.4              | LOS C            | 3.4                            | 23.9             | 0.96         | 0.77                        | 37.8               |
| 11                               | T1     | 44                 | 0.0        | 0.471         | 24.8              | LOS B            | 3.4                            | 23.9             | 0.96         | 0.77                        | 36.2               |
| 12                               | R2     | 72                 | 0.0        | 0.267         | 28.4              | LOS B            | 1.8                            | 12.8             | 0.93         | 0.74                        | 37.6               |
| Approach                         |        | 200                | 1.0        | 0.471         | 28.0              | LOS B            | 3.4                            | 23.9             | 0.95         | 0.76                        | 37.4               |
| All Vehicles                     |        | 1811               | 1.2        | 0.506         | 16.1              | LOS B            | 8.3                            | 58.3             | 0.81         | 0.69                        | 46.3               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P2                                 | East Full Crossing  | 2                 | 16.0              | LOS B            | 0.0                                  | 0.0              | 0.76         | 0.76                        |  |
| P3                                 | North Full Crossing | 15                | 18.4              | LOS B            | 0.0                                  | 0.0              | 0.82         | 0.82                        |  |
| All Pedestrians                    |                     | 17                | 18.1              | LOS B            |                                      |                  | 0.81         | 0.81                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

## MOVEMENT SUMMARY

### Site: Proposed AM

Coronation Parade & Tangarra ST/Dean St, Croydon Street  
 Signals - Fixed Time Isolated Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 56                 | 21.4       | 0.679         | 21.9              | LOS B            | 11.8                           | 99.2             | 0.87         | 0.79                        | 43.0               |
| 2                                | T1     | 868                | 23.8       | 0.679         | 16.2              | LOS B            | 11.8                           | 99.2             | 0.87         | 0.78                        | 47.2               |
| 3                                | R2     | 10                 | 10.0       | 0.679         | 21.9              | LOS B            | 11.4                           | 96.2             | 0.87         | 0.78                        | 43.4               |
| Approach                         |        | 934                | 23.6       | 0.679         | 16.6              | LOS B            | 11.8                           | 99.2             | 0.87         | 0.78                        | 46.9               |
| <b>East: Tangarra St (E)</b>     |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 27                 | 22.2       | 0.402         | 34.5              | LOS C            | 2.0                            | 16.6             | 0.98         | 0.74                        | 36.0               |
| 5                                | T1     | 41                 | 17.1       | 0.402         | 29.7              | LOS C            | 2.0                            | 16.6             | 0.98         | 0.74                        | 35.0               |
| 6                                | R2     | 104                | 25.0       | 0.660         | 36.6              | LOS C            | 3.3                            | 28.1             | 1.00         | 0.86                        | 34.3               |
| Approach                         |        | 172                | 22.7       | 0.660         | 34.6              | LOS C            | 3.3                            | 28.1             | 0.99         | 0.81                        | 34.7               |
| <b>North: Coronation Pde (N)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 32                 | 31.3       | 0.498         | 20.1              | LOS B            | 7.6                            | 64.8             | 0.78         | 0.69                        | 44.0               |
| 8                                | T1     | 496                | 24.8       | 0.498         | 15.8              | LOS B            | 7.6                            | 64.8             | 0.81         | 0.70                        | 47.2               |
| 9                                | R2     | 40                 | 17.5       | 0.498         | 24.4              | LOS B            | 5.5                            | 46.4             | 0.86         | 0.74                        | 41.6               |
| Approach                         |        | 568                | 24.6       | 0.498         | 16.7              | LOS B            | 7.6                            | 64.8             | 0.81         | 0.71                        | 46.6               |
| <b>West: Dean St (W)</b>         |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 120                | 20.0       | 0.699         | 32.3              | LOS C            | 6.5                            | 53.0             | 0.99         | 0.89                        | 36.6               |
| 11                               | T1     | 95                 | 17.9       | 0.699         | 27.6              | LOS B            | 6.5                            | 53.0             | 0.99         | 0.89                        | 35.4               |
| 12                               | R2     | 129                | 17.8       | 0.427         | 29.4              | LOS C            | 3.5                            | 28.6             | 0.93         | 0.78                        | 36.9               |
| Approach                         |        | 344                | 18.6       | 0.699         | 29.9              | LOS C            | 6.5                            | 53.0             | 0.97         | 0.85                        | 36.4               |
| All Vehicles                     |        | 2018               | 22.9       | 0.699         | 20.4              | LOS B            | 11.8                           | 99.2             | 0.88         | 0.78                        | 43.4               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                        |               |                  |              |                             |
|------------------------------------|---------------------|-------------------|-------------------|------------------|------------------------|---------------|------------------|--------------|-----------------------------|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Pedestrian ped | Back of Queue | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P2                                 | East Full Crossing  | 1                 | 16.9              | LOS B            | 0.0                    | 0.0           | 0.0              | 0.75         | 0.75                        |
| P3                                 | North Full Crossing | 28                | 18.4              | LOS B            | 0.0                    | 0.0           | 0.0              | 0.78         | 0.78                        |
| All Pedestrians                    |                     | 29                | 18.4              | LOS B            |                        |               |                  | 0.78         | 0.78                        |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:51:59 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\COR\_TANP.sip6

## MOVEMENT SUMMARY

### Site: Proposed PM

Coronation Parade & Tangarra ST/Dean St, Croydon Street  
 Signals - Fixed Time Isolated Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 44                       | 9.1  | 0.474         | 18.3              | LOS B            | 7.5                            | 62.7             | 0.75         | 0.66                        | 45.0               |
| 2                                | T1     | 619                      | 23.9 | 0.474         | 13.3              | LOS A            | 7.5                            | 62.7             | 0.76         | 0.67                        | 48.9               |
| 3                                | R2     | 13                       | 15.4 | 0.474         | 19.7              | LOS B            | 6.9                            | 57.7             | 0.77         | 0.67                        | 44.4               |
| Approach                         |        | 676                      | 22.8 | 0.474         | 13.8              | LOS A            | 7.5                            | 62.7             | 0.76         | 0.66                        | 48.5               |
| <b>East: Tangarra St (E)</b>     |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 21                       | 33.3 | 0.409         | 34.7              | LOS C            | 2.0                            | 17.1             | 0.98         | 0.74                        | 35.9               |
| 5                                | T1     | 64                       | 21.9 | 0.409         | 29.8              | LOS C            | 2.0                            | 16.6             | 0.98         | 0.75                        | 34.9               |
| 6                                | R2     | 50                       | 18.0 | 0.409         | 34.5              | LOS C            | 2.0                            | 16.6             | 0.98         | 0.75                        | 35.5               |
| Approach                         |        | 135                      | 22.2 | 0.409         | 32.3              | LOS C            | 2.0                            | 17.1             | 0.98         | 0.75                        | 35.3               |
| <b>North: Coronation Pde (N)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 44                       | 18.2 | 0.738         | 22.4              | LOS B            | 14.5                           | 123.5            | 0.88         | 0.84                        | 42.9               |
| 8                                | T1     | 895                      | 25.9 | 0.738         | 17.5              | LOS B            | 14.5                           | 123.5            | 0.89         | 0.85                        | 46.3               |
| 9                                | R2     | 56                       | 23.2 | 0.738         | 24.5              | LOS B            | 12.1                           | 103.4            | 0.90         | 0.87                        | 41.7               |
| Approach                         |        | 995                      | 25.4 | 0.738         | 18.1              | LOS B            | 14.5                           | 123.5            | 0.89         | 0.85                        | 45.8               |
| <b>West: Dean St (W)</b>         |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 119                      | 19.3 | 0.759         | 35.5              | LOS C            | 6.1                            | 49.5             | 1.00         | 0.95                        | 35.4               |
| 11                               | T1     | 72                       | 16.7 | 0.759         | 30.7              | LOS C            | 6.1                            | 49.5             | 1.00         | 0.95                        | 34.3               |
| 12                               | R2     | 143                      | 23.8 | 0.600         | 32.7              | LOS C            | 4.3                            | 35.9             | 0.98         | 0.83                        | 35.6               |
| Approach                         |        | 334                      | 20.7 | 0.759         | 33.3              | LOS C            | 6.1                            | 49.5             | 0.99         | 0.89                        | 35.2               |
| All Vehicles                     |        | 2140                     | 23.6 | 0.759         | 20.0              | LOS B            | 14.5                           | 123.5            | 0.87         | 0.79                        | 43.7               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                        |                          |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|------------------------|--------------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P2                                 | East Full Crossing  | 1                 | 15.4              | LOS B            | 0.0                    | 0.0                      | 0.72         | 0.72                        |  |
| P3                                 | North Full Crossing | 14                | 20.0              | LOS C            | 0.0                    | 0.0                      | 0.82         | 0.82                        |  |
| All Pedestrians                    |                     | 15                | 19.7              | LOS B            |                        |                          | 0.81         | 0.81                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:51:56 PM  
 Project: \\vtp\_nas\data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160817 Proposed\COR\_TANP.sip6

## MOVEMENT SUMMARY

### Site: Proposed SAT

Coronation Parade & Tangarra ST/Dean St, Croydon Street  
 Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles  |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                           | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Coronation Pde (S)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                                | L2     | 36                       | 5.6  | 0.526         | 18.9              | LOS B            | 7.5                            | 53.0             | 0.82         | 0.72                        | 44.8               |
| 2                                | T1     | 708                      | 1.1  | 0.526         | 13.3              | LOS A            | 7.5                            | 53.0             | 0.82         | 0.71                        | 49.0               |
| 3                                | R2     | 9                        | 0.0  | 0.526         | 18.9              | LOS B            | 7.2                            | 50.8             | 0.82         | 0.71                        | 45.1               |
| Approach                         |        | 753                      | 1.3  | 0.526         | 13.6              | LOS A            | 7.5                            | 53.0             | 0.82         | 0.71                        | 48.8               |
| <b>East: Tangarra St (E)</b>     |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                                | L2     | 32                       | 0.0  | 0.292         | 27.8              | LOS B            | 1.6                            | 11.2             | 0.95         | 0.73                        | 38.8               |
| 5                                | T1     | 36                       | 0.0  | 0.292         | 23.3              | LOS B            | 1.6                            | 11.2             | 0.95         | 0.73                        | 37.1               |
| 6                                | R2     | 64                       | 0.0  | 0.292         | 27.9              | LOS B            | 1.6                            | 11.0             | 0.95         | 0.74                        | 37.8               |
| Approach                         |        | 132                      | 0.0  | 0.292         | 26.6              | LOS B            | 1.6                            | 11.2             | 0.95         | 0.73                        | 37.8               |
| <b>North: Coronation Pde (N)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                | L2     | 35                       | 0.0  | 0.571         | 19.1              | LOS B            | 8.3                            | 58.7             | 0.84         | 0.73                        | 44.8               |
| 8                                | T1     | 688                      | 1.0  | 0.571         | 14.0              | LOS A            | 8.3                            | 58.7             | 0.85         | 0.74                        | 48.5               |
| 9                                | R2     | 39                       | 5.1  | 0.571         | 20.0              | LOS B            | 7.0                            | 49.7             | 0.86         | 0.74                        | 44.2               |
| Approach                         |        | 762                      | 1.2  | 0.571         | 14.5              | LOS B            | 8.3                            | 58.7             | 0.85         | 0.74                        | 48.1               |
| <b>West: Dean St (W)</b>         |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                               | L2     | 88                       | 2.3  | 0.520         | 27.7              | LOS B            | 3.3                            | 23.5             | 0.97         | 0.78                        | 38.5               |
| 11                               | T1     | 48                       | 0.0  | 0.520         | 23.2              | LOS B            | 3.3                            | 23.5             | 0.97         | 0.78                        | 36.9               |
| 12                               | R2     | 72                       | 0.0  | 0.277         | 26.7              | LOS B            | 1.7                            | 11.8             | 0.93         | 0.74                        | 38.3               |
| Approach                         |        | 208                      | 1.0  | 0.520         | 26.3              | LOS B            | 3.3                            | 23.5             | 0.96         | 0.77                        | 38.0               |
| All Vehicles                     |        | 1855                     | 1.1  | 0.571         | 16.3              | LOS B            | 8.3                            | 58.7             | 0.86         | 0.73                        | 46.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |      |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|------|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |      |
| P2                                 | East Full Crossing  | 2                 | 16.8              | LOS B            | 0.0                                  | 0.0              | 0.82         | 0.82                        |      |
| P3                                 | North Full Crossing | 15                | 16.8              | LOS B            | 0.0                                  | 0.0              | 0.82         | 0.82                        |      |
| All Pedestrians                    |                     | 17                | 16.8              | LOS B            |                                      |                  |              | 0.82                        | 0.82 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay).

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:51:53 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\COR\_TANP.sip6

## MOVEMENT SUMMARY

### Site: Existing AM

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 49                 | 0.0        | 0.163         | 15.4              | LOS B            | 2.2                            | 15.5             | 0.66         | 0.60                        | 42.3               |
| 2                               | T1     | 561                | 2.1        | 0.704         | 14.2              | LOS A            | 10.7                           | 76.2             | 0.80         | 0.74                        | 41.8               |
| Approach                        |        | 610                | 2.0        | 0.704         | 14.3              | LOS A            | 10.7                           | 76.2             | 0.79         | 0.73                        | 41.8               |
| <b>North: Burwood Rd (N)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 8                               | T1     | 402                | 2.7        | 0.507         | 7.8               | LOS A            | 7.0                            | 50.2             | 0.64         | 0.56                        | 44.6               |
| 9                               | R2     | 116                | 1.7        | 0.507         | 14.0              | LOS A            | 7.0                            | 50.2             | 0.75         | 0.66                        | 43.1               |
| Approach                        |        | 518                | 2.5        | 0.507         | 9.2               | LOS A            | 7.0                            | 50.2             | 0.67         | 0.58                        | 44.2               |
| <b>West: Mitchell St (W)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 274                | 0.0        | 0.704         | 24.0              | LOS B            | 6.7                            | 47.2             | 0.86         | 0.82                        | 37.4               |
| 12                              | R2     | 85                 | 0.0        | 0.704         | 28.2              | LOS B            | 6.7                            | 47.2             | 0.96         | 0.88                        | 35.8               |
| Approach                        |        | 359                | 0.0        | 0.704         | 25.0              | LOS B            | 6.7                            | 47.2             | 0.89         | 0.83                        | 37.0               |
| All Vehicles                    |        | 1487               | 1.7        | 0.704         | 15.1              | LOS B            | 10.7                           | 76.2             | 0.77         | 0.70                        | 41.3               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Accentuation Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3                                 | North Full Crossing | 17                | 21.8              | LOS C            | 0.0                                  | 0.0              | 0.89         | 0.89                        |
| P4                                 | West Full Crossing  | 9                 | 16.0              | LOS B            | 0.0                                  | 0.0              | 0.76         | 0.76                        |
| All Pedestrians                    |                     | 26                | 19.8              | LOS B            |                                      |                  | 0.85         | 0.85                        |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 12:39:58 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Existing with Opt Signals\\MIT\_BURX.sip6

## MOVEMENT SUMMARY

### Site: Existing PM

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                            |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|----------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                    |            |               |                   |                  |                            |                  |              |                             |                    |
| 1                               | L2     | 23                 | 0.0        | 0.154         | 20.5              | LOS B            | 1.7                        | 12.3             | 0.78         | 0.64                        | 40.2               |
| 2                               | T1     | 384                | 3.9        | 0.663         | 18.7              | LOS B            | 7.9                        | 56.9             | 0.89         | 0.77                        | 39.7               |
| Approach                        |        | 407                | 3.7        | 0.663         | 18.8              | LOS B            | 7.9                        | 56.9             | 0.88         | 0.77                        | 39.8               |
| <b>North: Burwood Rd (N)</b>    |        |                    |            |               |                   |                  |                            |                  |              |                             |                    |
| 8                               | T1     | 609                | 2.0        | 0.694         | 7.6               | LOS A            | 11.8                       | 83.3             | 0.67         | 0.63                        | 44.6               |
| 9                               | R2     | 224                | 0.0        | 0.694         | 13.9              | LOS A            | 11.8                       | 83.3             | 0.80         | 0.77                        | 43.0               |
| Approach                        |        | 833                | 1.4        | 0.694         | 9.3               | LOS A            | 11.8                       | 83.3             | 0.71         | 0.67                        | 44.1               |
| <b>West: Mitchell St (W)</b>    |        |                    |            |               |                   |                  |                            |                  |              |                             |                    |
| 10                              | L2     | 143                | 0.0        | 0.504         | 17.4              | LOS B            | 3.2                        | 22.2             | 0.68         | 0.71                        | 40.1               |
| 12                              | R2     | 80                 | 0.0        | 0.504         | 30.5              | LOS C            | 3.2                        | 22.2             | 0.98         | 0.78                        | 35.0               |
| Approach                        |        | 223                | 0.0        | 0.504         | 22.1              | LOS B            | 3.2                        | 22.2             | 0.78         | 0.73                        | 38.1               |
| All Vehicles                    |        | 1463               | 1.8        | 0.694         | 13.9              | LOS A            | 11.8                       | 83.3             | 0.77         | 0.71                        | 41.8               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                  |            |              |                             |
|------------------------------------|---------------------|-------------------|-------------------|------------------|----------------------------------|------------|--------------|-----------------------------|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian | Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3                                 | North Full Crossing | 19                | 21.8              | LOS C            | 0.0                              | 0.0        | 0.89         | 0.89                        |
| P4                                 | West Full Crossing  | 3                 | 21.8              | LOS C            | 0.0                              | 0.0        | 0.89         | 0.89                        |
| All Pedestrians                    |                     | 22                | 21.8              | LOS C            |                                  |            | 0.89         | 0.89                        |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 12:39:55 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Existing with Opt Signals\\MIT\_BURX.sip6

## MOVEMENT SUMMARY

### Site: Existing SAT

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 1                               | L2     | 40                       | 0.0  | 0.157         | 17.2              | LOS B            | 1.8                            | 12.4       | 0.73         | 0.63                        | 41.4               |
| 2                               | T1     | 452                      | 1.3  | 0.679         | 15.6              | LOS B            | 8.4                            | 59.8       | 0.86         | 0.77                        | 41.1               |
| Approach                        |        | 492                      | 1.2  | 0.679         | 15.7              | LOS B            | 8.4                            | 59.8       | 0.85         | 0.76                        | 41.1               |
| <b>North: Burwood Rd (N)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 8                               | T1     | 542                      | 1.1  | 0.719         | 8.8               | LOS A            | 11.2                           | 78.8       | 0.71         | 0.67                        | 44.0               |
| 9                               | R2     | 211                      | 0.0  | 0.719         | 15.8              | LOS B            | 11.2                           | 78.8       | 0.86         | 0.83                        | 42.1               |
| Approach                        |        | 753                      | 0.8  | 0.719         | 10.7              | LOS A            | 11.2                           | 78.8       | 0.75         | 0.71                        | 43.5               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 10                              | L2     | 192                      | 0.0  | 0.575         | 19.9              | LOS B            | 4.2                            | 29.2       | 0.79         | 0.75                        | 39.0               |
| 12                              | R2     | 83                       | 0.0  | 0.575         | 26.4              | LOS B            | 4.2                            | 29.2       | 0.96         | 0.82                        | 36.5               |
| Approach                        |        | 275                      | 0.0  | 0.575         | 21.9              | LOS B            | 4.2                            | 29.2       | 0.84         | 0.77                        | 38.2               |
| All Vehicles                    |        | 1520                     | 0.8  | 0.719         | 14.4              | LOS A            | 11.2                           | 78.8       | 0.80         | 0.74                        | 41.7               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |            |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P3                                 | North Full Crossing | 37                | 19.4              | LOS B            | 0.0                                  | 0.0        | 0.88         | 0.88                        |  |
| P4                                 | West Full Crossing  | 16                | 18.5              | LOS B            | 0.0                                  | 0.0        | 0.86         | 0.86                        |  |
| All Pedestrians                    |                     | 53                | 19.1              | LOS B            |                                      |            | 0.88         | 0.88                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 12:39:53 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Existing with Opt Signals\\MIT\_BURX.sip6

## MOVEMENT SUMMARY

### Site: Proposed AM

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 1                               | L2     | 49                       | 0.0  | 0.171         | 16.1              | LOS B            | 2.3                            | 16.0       | 0.68         | 0.61                        | 42.0               |
| 2                               | T1     | 561                      | 2.1  | 0.738         | 15.8              | LOS B            | 11.4                           | 81.1       | 0.83         | 0.78                        | 41.0               |
| Approach                        |        | 610                      | 2.0  | 0.738         | 15.8              | LOS B            | 11.4                           | 81.1       | 0.82         | 0.77                        | 41.1               |
| <b>North: Burwood Rd (N)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 8                               | T1     | 402                      | 2.7  | 0.535         | 8.5               | LOS A            | 7.4                            | 53.0       | 0.67         | 0.58                        | 44.2               |
| 9                               | R2     | 121                      | 1.7  | 0.535         | 14.9              | LOS B            | 7.4                            | 53.0       | 0.78         | 0.68                        | 42.6               |
| Approach                        |        | 523                      | 2.5  | 0.535         | 10.0              | LOS A            | 7.4                            | 53.0       | 0.70         | 0.60                        | 43.8               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 10                              | L2     | 294                      | 0.0  | 0.752         | 23.8              | LOS B            | 7.6                            | 53.1       | 0.85         | 0.84                        | 37.4               |
| 12                              | R2     | 102                      | 0.0  | 0.752         | 28.8              | LOS C            | 7.6                            | 53.1       | 0.96         | 0.92                        | 35.6               |
| Approach                        |        | 396                      | 0.0  | 0.752         | 25.1              | LOS B            | 7.6                            | 53.1       | 0.88         | 0.86                        | 36.9               |
| All Vehicles                    |        | 1529                     | 1.6  | 0.752         | 16.2              | LOS B            | 11.4                           | 81.1       | 0.79         | 0.73                        | 40.8               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |            |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P3                                 | North Full Crossing | 17                | 21.8              | LOS C            | 0.0                                  | 0.0        | 0.89         | 0.89                        |  |
| P4                                 | West Full Crossing  | 9                 | 16.8              | LOS B            | 0.0                                  | 0.0        | 0.78         | 0.78                        |  |
| All Pedestrians                    |                     | 26                | 20.1              | LOS C            |                                      |            | 0.85         | 0.85                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:40:01 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\MIT\_BURP.sip6

## MOVEMENT SUMMARY

### Site: Proposed PM

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 23                 | 0.0        | 0.150         | 21.4              | LOS B            | 1.9                            | 13.3             | 0.77         | 0.63                        | 39.8               |
| 2                               | T1     | 384                | 3.9        | 0.648         | 19.5              | LOS B            | 8.3                            | 60.1             | 0.87         | 0.75                        | 39.4               |
| Approach                        |        | 407                | 3.7        | 0.648         | 19.6              | LOS B            | 8.3                            | 60.1             | 0.87         | 0.75                        | 39.4               |
| <b>North: Burwood Rd (N)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 8                               | T1     | 609                | 2.0        | 0.686         | 7.4               | LOS A            | 12.5                           | 88.6             | 0.65         | 0.61                        | 44.7               |
| 9                               | R2     | 244                | 0.0        | 0.686         | 13.8              | LOS A            | 12.5                           | 88.6             | 0.78         | 0.75                        | 43.0               |
| Approach                        |        | 853                | 1.4        | 0.686         | 9.2               | LOS A            | 12.5                           | 88.6             | 0.68         | 0.65                        | 44.2               |
| <b>West: Mitchell St (W)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 149                | 0.0        | 0.554         | 17.5              | LOS B            | 3.5                            | 24.2             | 0.65         | 0.71                        | 40.0               |
| 12                              | R2     | 84                 | 0.0        | 0.554         | 33.8              | LOS C            | 3.5                            | 24.2             | 0.99         | 0.80                        | 34.0               |
| Approach                        |        | 233                | 0.0        | 0.554         | 23.4              | LOS B            | 3.5                            | 24.2             | 0.77         | 0.74                        | 37.6               |
| All Vehicles                    |        | 1493               | 1.8        | 0.686         | 14.3              | LOS A            | 12.5                           | 88.6             | 0.75         | 0.69                        | 41.7               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                        |                          |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|------------------------|--------------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P3                                 | North Full Crossing | 19                | 24.3              | LOS C            | 0.0                    | 0.0                      | 0.90         | 0.90                        |  |
| P4                                 | West Full Crossing  | 3                 | 22.5              | LOS C            | 0.0                    | 0.0                      | 0.87         | 0.87                        |  |
| All Pedestrians                    |                     | 22                | 24.1              | LOS C            |                        |                          | 0.90         | 0.90                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:39:57 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\MIT\_BURP.sip6

## MOVEMENT SUMMARY

### Site: Proposed SAT

Burwood Rd & Mitchell St, Croydon Park

Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Burwood Rd (S)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 40                       | 0.0  | 0.156         | 18.2              | LOS B            | 1.9                            | 13.6             | 0.72         | 0.63                        | 41.0               |
| 2                               | T1     | 452                      | 1.3  | 0.674         | 16.5              | LOS B            | 9.1                            | 64.1             | 0.85         | 0.76                        | 40.7               |
| Approach                        |        | 492                      | 1.2  | 0.674         | 16.7              | LOS B            | 9.1                            | 64.1             | 0.84         | 0.75                        | 40.7               |
| <b>North: Burwood Rd (N)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 8                               | T1     | 542                      | 1.1  | 0.690         | 8.0               | LOS A            | 11.5                           | 80.9             | 0.67         | 0.61                        | 44.4               |
| 9                               | R2     | 223                      | 0.0  | 0.690         | 14.9              | LOS B            | 11.5                           | 80.9             | 0.82         | 0.77                        | 42.5               |
| Approach                        |        | 765                      | 0.8  | 0.690         | 10.0              | LOS A            | 11.5                           | 80.9             | 0.72         | 0.66                        | 43.8               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 204                      | 0.0  | 0.672         | 21.2              | LOS B            | 4.9                            | 34.2             | 0.78         | 0.77                        | 38.5               |
| 12                              | R2     | 94                       | 0.0  | 0.672         | 31.3              | LOS C            | 4.9                            | 34.2             | 0.99         | 0.87                        | 34.8               |
| Approach                        |        | 298                      | 0.0  | 0.672         | 24.4              | LOS B            | 4.9                            | 34.2             | 0.84         | 0.80                        | 37.2               |
| All Vehicles                    |        | 1555                     | 0.8  | 0.690         | 14.9              | LOS B            | 11.5                           | 80.9             | 0.78         | 0.71                        | 41.4               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians |                     |                   |                   |                  |                                      |                  |              |                             |  |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------------|--------------|-----------------------------|--|
| Mov ID                             | Description         | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Queue Distance m | Prop. Queued | Effective Stop Rate per ped |  |
| P3                                 | North Full Crossing | 37                | 21.9              | LOS C            | 0.1                                  | 0.1              | 0.89         | 0.89                        |  |
| P4                                 | West Full Crossing  | 16                | 19.2              | LOS B            | 0.0                                  | 0.0              | 0.84         | 0.84                        |  |
| All Pedestrians                    |                     | 53                | 21.1              | LOS C            |                                      |                  | 0.88         | 0.88                        |  |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:39:53 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\MIT\_BURP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Existing AM

Georges River Rd & Stanley St, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Georges River Rd (E)      |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 5                               | T1     | 812                      | 1.7  | 0.286         | 2.1               | LOS A            | 2.0                            | 14.0       | 0.17         | 0.05                        | 57.5               |
| 6                               | R2     | 55                       | 0.0  | 0.286         | 17.6              | LOS B            | 2.0                            | 14.0       | 0.54         | 0.15                        | 48.1               |
| Approach                        |        | 867                      | 1.6  | 0.286         | 3.0               | NA               | 2.0                            | 14.0       | 0.20         | 0.05                        | 56.8               |
| North: Stanley St (N)           |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 7                               | L2     | 46                       | 0.0  | 0.062         | 7.6               | LOS A            | 0.2                            | 1.6        | 0.51         | 0.69                        | 47.8               |
| 9                               | R2     | 3                        | 0.0  | 0.054         | 66.7              | LOS E            | 0.2                            | 1.1        | 0.95         | 0.98                        | 27.0               |
| Approach                        |        | 49                       | 0.0  | 0.062         | 11.2              | LOS A            | 0.2                            | 1.6        | 0.54         | 0.71                        | 45.7               |
| West: Georges River Rd (W)      |        |                          |      |               |                   |                  |                                |            |              |                             |                    |
| 10                              | L2     | 41                       | 0.0  | 0.321         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.04                        | 58.0               |
| 11                              | T1     | 1195                     | 1.8  | 0.321         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.02                        | 59.7               |
| Approach                        |        | 1236                     | 1.7  | 0.321         | 0.2               | NA               | 0.0                            | 0.0        | 0.00         | 0.02                        | 59.7               |
| All Vehicles                    |        | 2152                     | 1.6  | 0.321         | 1.6               | NA               | 2.0                            | 14.0       | 0.09         | 0.05                        | 58.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Existing PM

Georges River Rd & Stanley St, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles   |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
|-----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|------------------|--------------------------|--------------|-----------------------------|--------------------|
| Mov ID                            | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Georges River Rd (E)</b> |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 5                                 | T1     | 1340               | 0.4        | 0.425         | 1.4               | LOS A            | 2.7              | 19.3                     | 0.16         | 0.04                        | 58.1               |
| 6                                 | R2     | 86                 | 0.0        | 0.425         | 14.6              | LOS B            | 2.7              | 19.3                     | 0.42         | 0.12                        | 50.2               |
| Approach                          |        | 1426               | 0.4        | 0.425         | 2.2               | NA               | 2.7              | 19.3                     | 0.18         | 0.05                        | 57.6               |
| <b>North: Stanley St (N)</b>      |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 7                                 | L2     | 53                 | 0.0        | 0.063         | 6.8               | LOS A            | 0.2              | 1.7                      | 0.46         | 0.64                        | 48.3               |
| 9                                 | R2     | 7                  | 0.0        | 0.271         | 159.7             | LOS F            | 0.7              | 5.1                      | 0.98         | 1.00                        | 16.0               |
| Approach                          |        | 60                 | 0.0        | 0.271         | 24.6              | LOS B            | 0.7              | 5.1                      | 0.52         | 0.68                        | 39.1               |
| <b>West: Georges River Rd (W)</b> |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 10                                | L2     | 13                 | 0.0        | 0.247         | 5.6               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.02                        | 58.2               |
| 11                                | T1     | 946                | 0.7        | 0.247         | 0.0               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.01                        | 59.9               |
| Approach                          |        | 959                | 0.7        | 0.247         | 0.1               | NA               | 0.0              | 0.0                      | 0.00         | 0.01                        | 59.9               |
| All Vehicles                      |        | 2445               | 0.5        | 0.425         | 1.9               | NA               | 2.7              | 19.3                     | 0.12         | 0.05                        | 57.8               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 9:39:21 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160816 Existing\GEO\_STAX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Existing SAT

Georges River Rd & Stanley St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles   |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|-----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                            | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Georges River Rd (E)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 5                                 | T1     | 1054               | 0.9        | 0.379         | 1.6               | LOS A            | 2.7                            | 19.0             | 0.18         | 0.07                        | 57.9               |
| 6                                 | R2     | 119                | 0.0        | 0.379         | 13.4              | LOS A            | 2.7                            | 19.0             | 0.58         | 0.24                        | 48.8               |
| Approach                          |        | 1173               | 0.8        | 0.379         | 2.8               | NA               | 2.7                            | 19.0             | 0.22         | 0.09                        | 56.8               |
| <b>North: Stanley St (N)</b>      |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 7                                 | L2     | 55                 | 0.0        | 0.064         | 6.7               | LOS A            | 0.2                            | 1.7              | 0.45         | 0.63                        | 48.4               |
| 9                                 | R2     | 8                  | 0.0        | 0.167         | 80.5              | LOS F            | 0.5                            | 3.3              | 0.96         | 0.99                        | 24.5               |
| Approach                          |        | 63                 | 0.0        | 0.167         | 16.1              | LOS B            | 0.5                            | 3.3              | 0.52         | 0.68                        | 43.1               |
| <b>West: Georges River Rd (W)</b> |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 10                                | L2     | 19                 | 0.0        | 0.241         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.02                        | 58.1               |
| 11                                | T1     | 916                | 0.4        | 0.241         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.01                        | 59.8               |
| Approach                          |        | 935                | 0.4        | 0.241         | 0.1               | NA               | 0.0                            | 0.0              | 0.00         | 0.01                        | 59.8               |
| All Vehicles                      |        | 2171               | 0.6        | 0.379         | 2.0               | NA               | 2.7                            | 19.0             | 0.13         | 0.07                        | 57.5               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 9:39:22 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160816 Existing\GEO\_STAX.sip6

## MOVEMENT SUMMARY

### ▼ Site: Proposed AM

Georges River Rd & Stanley St, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|-----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                            | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Georges River Rd (E)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 5                                 | T1     | 812                      | 1.7  | 0.298         | 2.2               | LOS A            | 2.1                            | 15.2             | 0.18         | 0.05                        | 57.4               |
| 6                                 | R2     | 64                       | 0.0  | 0.298         | 17.6              | LOS B            | 2.1                            | 15.2             | 0.61         | 0.19                        | 47.4               |
| Approach                          |        | 876                      | 1.6  | 0.298         | 3.3               | NA               | 2.1                            | 15.2             | 0.21         | 0.06                        | 56.5               |
| <b>North: Stanley St (N)</b>      |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                 | L2     | 63                       | 0.0  | 0.086         | 7.7               | LOS A            | 0.3                            | 2.3              | 0.52         | 0.70                        | 47.8               |
| 9                                 | R2     | 3                        | 0.0  | 0.055         | 66.9              | LOS E            | 0.2                            | 1.1              | 0.95         | 0.98                        | 26.9               |
| Approach                          |        | 66                       | 0.0  | 0.086         | 10.4              | LOS A            | 0.3                            | 2.3              | 0.54         | 0.72                        | 46.2               |
| <b>West: Georges River Rd (W)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                                | L2     | 41                       | 0.0  | 0.321         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.04                        | 58.0               |
| 11                                | T1     | 1195                     | 1.8  | 0.321         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.02                        | 59.7               |
| Approach                          |        | 1236                     | 1.7  | 0.321         | 0.2               | NA               | 0.0                            | 0.0              | 0.00         | 0.02                        | 59.7               |
| All Vehicles                      |        | 2178                     | 1.6  | 0.321         | 1.8               | NA               | 2.1                            | 15.2             | 0.10         | 0.06                        | 57.9               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Proposed PM

Georges River Rd & Stanley St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles   |        |                    |            |               |                   |                  |                                |            |              |                             |                    |
|-----------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID                            | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Georges River Rd (E)</b> |        |                    |            |               |                   |                  |                                |            |              |                             |                    |
| 5                                 | T1     | 1340               | 0.4        | 0.457         | 1.7               | LOS A            | 3.6                            | 25.2       | 0.19         | 0.06                        | 57.7               |
| 6                                 | R2     | 121                | 0.0        | 0.457         | 14.8              | LOS B            | 3.6                            | 25.2       | 0.56         | 0.19                        | 48.9               |
| Approach                          |        | 1461               | 0.4        | 0.457         | 2.8               | NA               | 3.6                            | 25.2       | 0.22         | 0.07                        | 56.9               |
| <b>North: Stanley St (N)</b>      |        |                    |            |               |                   |                  |                                |            |              |                             |                    |
| 7                                 | L2     | 57                 | 0.0        | 0.067         | 6.8               | LOS A            | 0.3                            | 1.8        | 0.46         | 0.64                        | 48.3               |
| 9                                 | R2     | 7                  | 0.0        | 0.314         | 191.7             | LOS F            | 0.8                            | 5.9        | 0.99         | 1.01                        | 14.0               |
| Approach                          |        | 64                 | 0.0        | 0.314         | 27.0              | LOS B            | 0.8                            | 5.9        | 0.52         | 0.68                        | 38.1               |
| <b>West: Georges River Rd (W)</b> |        |                    |            |               |                   |                  |                                |            |              |                             |                    |
| 10                                | L2     | 13                 | 0.0        | 0.247         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.02                        | 58.2               |
| 11                                | T1     | 946                | 0.7        | 0.247         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.01                        | 59.9               |
| Approach                          |        | 959                | 0.7        | 0.247         | 0.1               | NA               | 0.0                            | 0.0        | 0.00         | 0.01                        | 59.9               |
| All Vehicles                      |        | 2484               | 0.5        | 0.457         | 2.4               | NA               | 3.6                            | 25.2       | 0.14         | 0.06                        | 57.2               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akçelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 9:42:24 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160817 Proposed\GEO\_STAP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Proposed SAT

Georges River Rd & Stanley St, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|-----------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                            | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Georges River Rd (E)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 5                                 | T1     | 1054                     | 0.9  | 0.398         | 1.6               | LOS A            | 3.0                            | 20.8             | 0.17         | 0.08                        | 57.8               |
| 6                                 | R2     | 140                      | 0.0  | 0.398         | 13.5              | LOS A            | 3.0                            | 20.8             | 0.65         | 0.31                        | 48.1               |
| Approach                          |        | 1194                     | 0.8  | 0.398         | 3.0               | NA               | 3.0                            | 20.8             | 0.23         | 0.11                        | 56.5               |
| <b>North: Stanley St (N)</b>      |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                                 | L2     | 66                       | 0.0  | 0.076         | 6.7               | LOS A            | 0.3                            | 2.1              | 0.45         | 0.64                        | 48.4               |
| 9                                 | R2     | 8                        | 0.0  | 0.179         | 86.9              | LOS F            | 0.5                            | 3.5              | 0.97         | 0.99                        | 23.5               |
| Approach                          |        | 74                       | 0.0  | 0.179         | 15.4              | LOS B            | 0.5                            | 3.5              | 0.51         | 0.68                        | 43.4               |
| <b>West: Georges River Rd (W)</b> |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                                | L2     | 19                       | 0.0  | 0.241         | 5.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.02                        | 58.1               |
| 11                                | T1     | 916                      | 0.4  | 0.241         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.01                        | 59.8               |
| Approach                          |        | 935                      | 0.4  | 0.241         | 0.1               | NA               | 0.0                            | 0.0              | 0.00         | 0.01                        | 59.8               |
| All Vehicles                      |        | 2203                     | 0.6  | 0.398         | 2.2               | NA               | 3.0                            | 20.8             | 0.14         | 0.09                        | 57.3               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Thursday, August 18, 2016 9:42:25 AM

Project: Z:\Data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160817 Proposed\GEO\_STAP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Existing AM

Mitchell St & Site Access, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 10                 | 10.0       | 0.011         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 10                 | 0.0        | 0.011         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>Approach</b>                 |        | 20                 | 5.0        | 0.011         | 0.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 25                 | 4.0        | 0.150         | 8.2               | LOS A            | 0.5                            | 3.8              | 0.23         | 0.53                        | 16.4               |
| 5                               | T1     | 177                | 0.6        | 0.150         | 3.9               | LOS A            | 0.5                            | 3.8              | 0.23         | 0.53                        | 46.7               |
| <b>Approach</b>                 |        | 202                | 1.0        | 0.150         | 4.4               | LOS A            | 0.5                            | 3.8              | 0.23         | 0.53                        | 38.0               |
| <b>West: Mitchell St (W)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 11                              | T1     | 305                | 0.0        | 0.220         | 3.2               | LOS A            | 0.9                            | 6.6              | 0.06         | 0.47                        | 47.3               |
| 12                              | R2     | 13                 | 15.4       | 0.220         | 8.0               | LOS A            | 0.9                            | 6.6              | 0.06         | 0.47                        | 16.5               |
| <b>Approach</b>                 |        | 318                | 0.6        | 0.220         | 3.4               | LOS A            | 0.9                            | 6.6              | 0.06         | 0.47                        | 44.0               |
| <b>All Vehicles</b>             |        | 540                | 0.9        | 0.220         | 3.7               | NA               | 0.9                            | 6.6              | 0.12         | 0.47                        | 37.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Tuesday, August 16, 2016 3:52:24 PM

Project: \\vtp\_nas\\data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160816 Existing\\MIT\_SITX.sip6

## MOVEMENT SUMMARY

### ▼ Site: Existing PM

Mitchell St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 36                       | 0.0  | 0.033         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 26                       | 0.0  | 0.033         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| Approach                        |        | 62                       | 0.0  | 0.033         | 0.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 17                       | 0.0  | 0.194         | 8.2               | LOS A            | 0.7                            | 4.9              | 0.22         | 0.51                        | 16.5               |
| 5                               | T1     | 243                      | 0.0  | 0.194         | 3.8               | LOS A            | 0.7                            | 4.9              | 0.22         | 0.51                        | 46.8               |
| Approach                        |        | 260                      | 0.0  | 0.194         | 4.1               | LOS A            | 0.7                            | 4.9              | 0.22         | 0.51                        | 41.8               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 11                              | T1     | 200                      | 0.0  | 0.156         | 3.3               | LOS A            | 0.6                            | 4.3              | 0.11         | 0.48                        | 47.1               |
| 12                              | R2     | 17                       | 0.0  | 0.156         | 8.0               | LOS A            | 0.6                            | 4.3              | 0.11         | 0.48                        | 16.5               |
| Approach                        |        | 217                      | 0.0  | 0.156         | 3.7               | LOS A            | 0.6                            | 4.3              | 0.11         | 0.48                        | 41.1               |
| All Vehicles                    |        | 539                      | 0.0  | 0.194         | 3.5               | NA               | 0.7                            | 4.9              | 0.15         | 0.44                        | 30.4               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Existing SAT

Mitchell St & Site Access, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                          |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                          |      |               |                   |                  |                          |                  |              |                             |                    |
| 1                               | L2     | 83                       | 0.0  | 0.077         | 0.0               | LOS A            | 0.0                      | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 60                       | 0.0  | 0.077         | 0.0               | LOS A            | 0.0                      | 0.0              | 0.00         | 0.00                        | 10.0               |
| Approach                        |        | 143                      | 0.0  | 0.077         | 0.0               | NA               | 0.0                      | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                          |      |               |                   |                  |                          |                  |              |                             |                    |
| 4                               | L2     | 92                       | 0.0  | 0.226         | 8.2               | LOS A            | 0.9                      | 6.4              | 0.29         | 0.58                        | 16.4               |
| 5                               | T1     | 218                      | 0.0  | 0.226         | 4.5               | LOS A            | 0.9                      | 6.4              | 0.29         | 0.58                        | 46.0               |
| Approach                        |        | 310                      | 0.0  | 0.226         | 5.6               | LOS A            | 0.9                      | 6.4              | 0.29         | 0.58                        | 29.9               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                          |                  |              |                             |                    |
| 11                              | T1     | 203                      | 0.0  | 0.228         | 3.5               | LOS A            | 0.9                      | 6.6              | 0.22         | 0.57                        | 46.5               |
| 12                              | R2     | 70                       | 0.0  | 0.228         | 8.8               | LOS A            | 0.9                      | 6.6              | 0.22         | 0.57                        | 16.4               |
| Approach                        |        | 273                      | 0.0  | 0.228         | 4.9               | LOS A            | 0.9                      | 6.6              | 0.22         | 0.57                        | 31.6               |
| All Vehicles                    |        | 726                      | 0.0  | 0.228         | 4.2               | NA               | 0.9                      | 6.6              | 0.21         | 0.46                        | 21.8               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: VARGA TRAFFIC PLANNING | Processed: Tuesday, August 16, 2016 3:55:08 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160816 Existing\\MIT\_SITX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Proposed AM

Mitchell St & Site Access, Croydon Park  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 22                 | 4.5        | 0.027         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 27                 | 0.0        | 0.027         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| Approach                        |        | 49                 | 2.0        | 0.027         | 0.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 8                  | 12.5       | 0.144         | 8.3               | LOS A            | 0.5                            | 3.5              | 0.25         | 0.51                        | 16.5               |
| 5                               | T1     | 177                | 0.6        | 0.144         | 3.9               | LOS A            | 0.5                            | 3.5              | 0.25         | 0.51                        | 46.8               |
| Approach                        |        | 185                | 1.1        | 0.144         | 4.1               | LOS A            | 0.5                            | 3.5              | 0.25         | 0.51                        | 43.4               |
| <b>West: Mitchell St (W)</b>    |        |                    |            |               |                   |                  |                                |                  |              |                             |                    |
| 11                              | T1     | 305                | 0.0        | 0.217         | 3.3               | LOS A            | 0.9                            | 6.5              | 0.12         | 0.45                        | 47.2               |
| 12                              | R2     | 6                  | 33.3       | 0.217         | 8.5               | LOS A            | 0.9                            | 6.5              | 0.12         | 0.45                        | 16.5               |
| Approach                        |        | 311                | 0.6        | 0.217         | 3.4               | LOS A            | 0.9                            | 6.5              | 0.12         | 0.45                        | 45.6               |
| All Vehicles                    |        | 545                | 0.9        | 0.217         | 3.3               | NA               | 0.9                            | 6.5              | 0.15         | 0.43                        | 34.1               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:34:22 PM

Project: \vtp\_nas\data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160817 Proposed\MIT\_SITP.sip6

## MOVEMENT SUMMARY

### ▽ Site: Proposed PM

Mitchell St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 6                        | 0.0  | 0.007         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 7                        | 0.0  | 0.007         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| Approach                        |        | 13                       | 0.0  | 0.007         | 0.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 28                       | 0.0  | 0.192         | 8.2               | LOS A            | 0.7                            | 5.0              | 0.18         | 0.51                        | 16.5               |
| 5                               | T1     | 243                      | 0.0  | 0.192         | 3.6               | LOS A            | 0.7                            | 5.0              | 0.18         | 0.51                        | 46.8               |
| Approach                        |        | 271                      | 0.0  | 0.192         | 4.1               | LOS A            | 0.7                            | 5.0              | 0.18         | 0.51                        | 39.3               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 11                              | T1     | 200                      | 0.0  | 0.157         | 3.2               | LOS A            | 0.6                            | 4.4              | 0.03         | 0.50                        | 47.2               |
| 12                              | R2     | 22                       | 0.0  | 0.157         | 7.9               | LOS A            | 0.6                            | 4.4              | 0.03         | 0.50                        | 16.5               |
| Approach                        |        | 222                      | 0.0  | 0.157         | 3.7               | LOS A            | 0.6                            | 4.4              | 0.03         | 0.50                        | 39.9               |
| All Vehicles                    |        | 506                      | 0.0  | 0.192         | 3.8               | NA               | 0.7                            | 5.0              | 0.11         | 0.49                        | 36.8               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:34:20 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\MIT\_SITP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Proposed SAT

Mitchell St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>South: Site Access (S)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 1                               | L2     | 14                       | 0.0  | 0.017         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| 3                               | R2     | 17                       | 0.0  | 0.017         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| Approach                        |        | 31                       | 0.0  | 0.017         | 0.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.00                        | 10.0               |
| <b>East: Mitchell St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 4                               | L2     | 17                       | 0.0  | 0.171         | 8.2               | LOS A            | 0.6                            | 4.3              | 0.20         | 0.50                        | 16.5               |
| 5                               | T1     | 218                      | 0.0  | 0.171         | 3.7               | LOS A            | 0.6                            | 4.3              | 0.20         | 0.50                        | 46.9               |
| Approach                        |        | 235                      | 0.0  | 0.171         | 4.0               | LOS A            | 0.6                            | 4.3              | 0.20         | 0.50                        | 41.3               |
| <b>West: Mitchell St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 11                              | T1     | 203                      | 0.0  | 0.153         | 3.3               | LOS A            | 0.6                            | 4.3              | 0.07         | 0.48                        | 47.2               |
| 12                              | R2     | 15                       | 0.0  | 0.153         | 7.8               | LOS A            | 0.6                            | 4.3              | 0.07         | 0.48                        | 16.5               |
| Approach                        |        | 218                      | 0.0  | 0.153         | 3.6               | LOS A            | 0.6                            | 4.3              | 0.07         | 0.48                        | 41.8               |
| All Vehicles                    |        | 484                      | 0.0  | 0.171         | 3.5               | NA               | 0.6                            | 4.3              | 0.13         | 0.46                        | 34.6               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:34:18 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\MIT\_SITP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Existing AM

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 5                               | T1     | 36                       | 0.0  | 0.020         | 0.0               | LOS A            | 0.0                            | 0.1              | 0.03         | 0.07                        | 49.6               |
| 6                               | R2     | 3                        | 0.0  | 0.020         | 6.8               | LOS A            | 0.0                            | 0.1              | 0.03         | 0.07                        | 16.7               |
| Approach                        |        | 39                       | 0.0  | 0.020         | 0.5               | NA               | 0.0                            | 0.1              | 0.03         | 0.07                        | 43.1               |
| <b>North: Site Access (N)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                               | L2     | 6                        | 0.0  | 0.005         | 0.2               | LOS A            | 0.0                            | 0.1              | 0.14         | 0.04                        | 16.3               |
| 9                               | R2     | 1                        | 0.0  | 0.005         | 0.3               | LOS A            | 0.0                            | 0.1              | 0.14         | 0.04                        | 16.3               |
| Approach                        |        | 7                        | 0.0  | 0.005         | 0.2               | LOS A            | 0.0                            | 0.1              | 0.14         | 0.04                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 1                        | 0.0  | 0.032         | 8.2               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.02                        | 48.6               |
| 11                              | T1     | 61                       | 0.0  | 0.032         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.02                        | 49.9               |
| Approach                        |        | 62                       | 0.0  | 0.032         | 0.1               | NA               | 0.0                            | 0.0              | 0.00         | 0.02                        | 49.9               |
| All Vehicles                    |        | 108                      | 0.0  | 0.032         | 0.3               | NA               | 0.0                            | 0.1              | 0.02         | 0.04                        | 41.9               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Tuesday, August 16, 2016 3:42:58 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160816 Existing\\TAN\_SITX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Existing PM

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|------------------|--------------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 5                               | T1     | 48                 | 0.0        | 0.025         | 0.0               | LOS A            | 0.0              | 0.0                      | 0.01         | 0.02                        | 49.9               |
| 6                               | R2     | 1                  | 0.0        | 0.025         | 6.8               | LOS A            | 0.0              | 0.0                      | 0.01         | 0.02                        | 16.8               |
| Approach                        |        | 49                 | 0.0        | 0.025         | 0.1               | NA               | 0.0              | 0.0                      | 0.01         | 0.02                        | 48.0               |
| <b>North: Site Access (N)</b>   |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 7                               | L2     | 1                  | 0.0        | 0.001         | 0.1               | LOS A            | 0.0              | 0.0                      | 0.12         | 0.03                        | 16.4               |
| 9                               | R2     | 1                  | 0.0        | 0.001         | 0.3               | LOS A            | 0.0              | 0.0                      | 0.12         | 0.03                        | 16.3               |
| Approach                        |        | 2                  | 0.0        | 0.001         | 0.2               | LOS A            | 0.0              | 0.0                      | 0.12         | 0.03                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 10                              | L2     | 1                  | 0.0        | 0.024         | 8.2               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.02                        | 48.6               |
| 11                              | T1     | 46                 | 0.0        | 0.024         | 0.0               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.02                        | 49.9               |
| Approach                        |        | 47                 | 0.0        | 0.024         | 0.2               | NA               | 0.0              | 0.0                      | 0.00         | 0.02                        | 49.8               |
| All Vehicles                    |        | 98                 | 0.0        | 0.025         | 0.2               | NA               | 0.0              | 0.0                      | 0.01         | 0.02                        | 47.0               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Tuesday, August 16, 2016 3:44:08 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160816 Existing\\TAN\_SITX.sip6

## MOVEMENT SUMMARY

### ▽ Site: Existing SAT

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                          |                  |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|--------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                    |            |               |                   |                  |                          |                  |              |                             |                    |
| 5                               | T1     | 47                 | 0.0        | 0.025         | 0.0               | LOS A            | 0.0                      | 0.0              | 0.01         | 0.02                        | 49.9               |
| 6                               | R2     | 1                  | 0.0        | 0.025         | 6.7               | LOS A            | 0.0                      | 0.0              | 0.01         | 0.02                        | 16.8               |
| <b>Approach</b>                 |        | 48                 | 0.0        | 0.025         | 0.1               | NA               | 0.0                      | 0.0              | 0.01         | 0.02                        | 47.9               |
| <b>North: Site Access (N)</b>   |        |                    |            |               |                   |                  |                          |                  |              |                             |                    |
| 7                               | L2     | 5                  | 0.0        | 0.007         | 0.1               | LOS A            | 0.0                      | 0.2              | 0.11         | 0.03                        | 16.4               |
| 9                               | R2     | 5                  | 0.0        | 0.007         | 0.3               | LOS A            | 0.0                      | 0.2              | 0.11         | 0.03                        | 16.3               |
| <b>Approach</b>                 |        | 10                 | 0.0        | 0.007         | 0.2               | LOS A            | 0.0                      | 0.2              | 0.11         | 0.03                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                    |            |               |                   |                  |                          |                  |              |                             |                    |
| 10                              | L2     | 2                  | 0.0        | 0.021         | 8.2               | LOS A            | 0.0                      | 0.0              | 0.00         | 0.06                        | 48.4               |
| 11                              | T1     | 39                 | 0.0        | 0.021         | 0.0               | LOS A            | 0.0                      | 0.0              | 0.00         | 0.06                        | 49.7               |
| <b>Approach</b>                 |        | 41                 | 0.0        | 0.021         | 0.4               | NA               | 0.0                      | 0.0              | 0.00         | 0.06                        | 49.7               |
| <b>All Vehicles</b>             |        | 99                 | 0.0        | 0.025         | 0.3               | NA               | 0.0                      | 0.2              | 0.01         | 0.04                        | 40.6               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## MOVEMENT SUMMARY

### ▼ Site: Proposed AM

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 5                               | T1     | 36                       | 0.0  | 0.022         | 0.0               | LOS A            | 0.0                            | 0.2              | 0.05         | 0.13                        | 49.2               |
| 6                               | R2     | 6                        | 0.0  | 0.022         | 6.8               | LOS A            | 0.0                            | 0.2              | 0.05         | 0.13                        | 16.7               |
| Approach                        |        | 42                       | 0.0  | 0.022         | 1.0               | NA               | 0.0                            | 0.2              | 0.05         | 0.13                        | 38.5               |
| <b>North: Site Access (N)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                               | L2     | 27                       | 0.0  | 0.036         | 0.2               | LOS A            | 0.1                            | 0.9              | 0.15         | 0.05                        | 16.4               |
| 9                               | R2     | 22                       | 0.0  | 0.036         | 0.3               | LOS A            | 0.1                            | 0.9              | 0.15         | 0.05                        | 16.3               |
| Approach                        |        | 49                       | 0.0  | 0.036         | 0.2               | LOS A            | 0.1                            | 0.9              | 0.15         | 0.05                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 5                        | 0.0  | 0.034         | 8.2               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.09                        | 48.3               |
| 11                              | T1     | 61                       | 0.0  | 0.034         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.09                        | 49.6               |
| Approach                        |        | 66                       | 0.0  | 0.034         | 0.6               | NA               | 0.0                            | 0.0              | 0.00         | 0.09                        | 49.5               |
| All Vehicles                    |        | 157                      | 0.0  | 0.036         | 0.6               | NA               | 0.1                            | 0.9              | 0.06         | 0.09                        | 28.9               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:31:02 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\TAN\_SITP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Proposed PM

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
|---------------------------------|--------|--------------------|------------|---------------|-------------------|------------------|------------------|--------------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 5                               | T1     | 48                 | 0.0        | 0.041         | 0.1               | LOS A            | 0.1              | 1.0                      | 0.11         | 0.31                        | 48.2               |
| 6                               | R2     | 27                 | 0.0        | 0.041         | 6.8               | LOS A            | 0.1              | 1.0                      | 0.11         | 0.31                        | 16.6               |
| Approach                        |        | 75                 | 0.0        | 0.041         | 2.5               | NA               | 0.1              | 1.0                      | 0.11         | 0.31                        | 28.6               |
| <b>North: Site Access (N)</b>   |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 7                               | L2     | 7                  | 0.0        | 0.009         | 0.1               | LOS A            | 0.0              | 0.2                      | 0.12         | 0.04                        | 16.4               |
| 9                               | R2     | 5                  | 0.0        | 0.009         | 0.4               | LOS A            | 0.0              | 0.2                      | 0.12         | 0.04                        | 16.3               |
| Approach                        |        | 12                 | 0.0        | 0.009         | 0.2               | LOS A            | 0.0              | 0.2                      | 0.12         | 0.04                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                    |            |               |                   |                  |                  |                          |              |                             |                    |
| 10                              | L2     | 21                 | 0.0        | 0.035         | 8.2               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.34                        | 47.1               |
| 11                              | T1     | 46                 | 0.0        | 0.035         | 0.0               | LOS A            | 0.0              | 0.0                      | 0.00         | 0.34                        | 48.3               |
| Approach                        |        | 67                 | 0.0        | 0.035         | 2.6               | NA               | 0.0              | 0.0                      | 0.00         | 0.34                        | 47.9               |
| All Vehicles                    |        | 154                | 0.0        | 0.041         | 2.4               | NA               | 0.1              | 1.0                      | 0.06         | 0.30                        | 32.4               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akçelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:31:00 PM

Project: \\vtp\_nas\data\Jobs01\Jobs\Tram\SIDRA\16519 Flower Power Enfield\160817 Proposed\TAN\_SITP.sip6

## MOVEMENT SUMMARY

### ▼ Site: Proposed SAT

Tangarra St & Site Access, Croydon Park  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID                          | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| <b>East: Tangarra St (E)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 5                               | T1     | 47                       | 0.0  | 0.034         | 0.1               | LOS A            | 0.1                            | 0.6              | 0.07         | 0.22                        | 48.7               |
| 6                               | R2     | 16                       | 0.0  | 0.034         | 6.8               | LOS A            | 0.1                            | 0.6              | 0.07         | 0.22                        | 16.6               |
| Approach                        |        | 63                       | 0.0  | 0.034         | 1.8               | NA               | 0.1                            | 0.6              | 0.07         | 0.22                        | 32.7               |
| <b>North: Site Access (N)</b>   |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 7                               | L2     | 17                       | 0.0  | 0.022         | 0.1               | LOS A            | 0.1                            | 0.5              | 0.11         | 0.04                        | 16.4               |
| 9                               | R2     | 13                       | 0.0  | 0.022         | 0.3               | LOS A            | 0.1                            | 0.5              | 0.11         | 0.04                        | 16.3               |
| Approach                        |        | 30                       | 0.0  | 0.022         | 0.2               | LOS A            | 0.1                            | 0.5              | 0.11         | 0.04                        | 16.3               |
| <b>West: Tangarra St (W)</b>    |        |                          |      |               |                   |                  |                                |                  |              |                             |                    |
| 10                              | L2     | 14                       | 0.0  | 0.028         | 8.2               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.29                        | 47.3               |
| 11                              | T1     | 39                       | 0.0  | 0.028         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.29                        | 48.6               |
| Approach                        |        | 53                       | 0.0  | 0.028         | 2.2               | NA               | 0.0                            | 0.0              | 0.00         | 0.29                        | 48.2               |
| All Vehicles                    |        | 146                      | 0.0  | 0.034         | 1.6               | NA               | 0.1                            | 0.6              | 0.05         | 0.21                        | 30.0               |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

---

**SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com**

Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, August 17, 2016 3:30:58 PM

Project: \\vtp\_nas\\data\\Data\\Jobs01\\Jobs\\Tram\\SIDRA\\16519 Flower Power Enfield\\160817 Proposed\\TAN\_SITP.sip6